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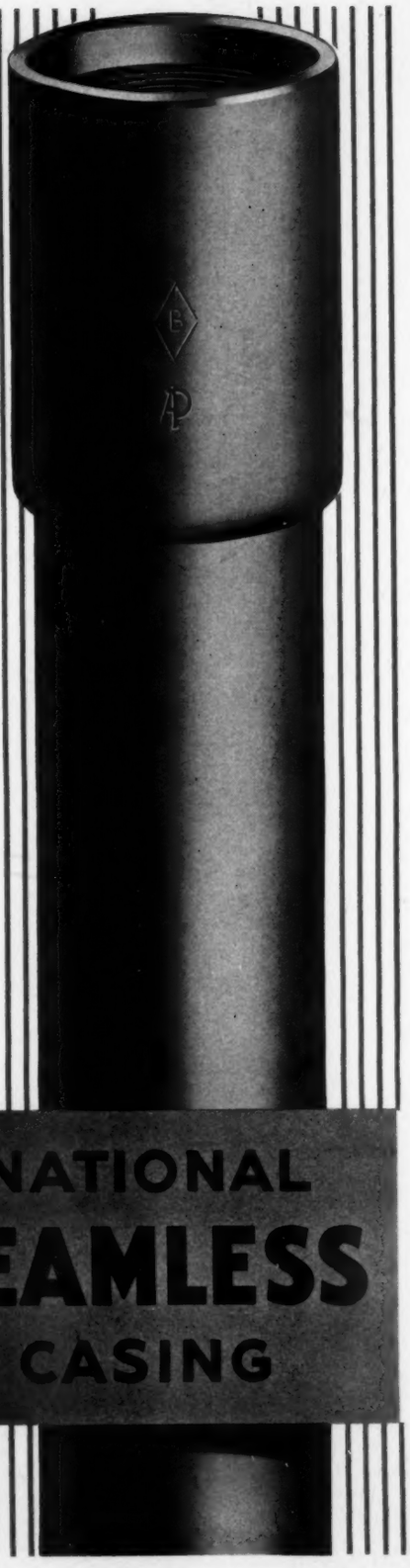

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THE OIL AND GAS JOURNAL

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New Discovery in East Texas With Increasing Hot Oil Intensifies Need for Control Bill

By ANDREW M. ROWLEY

EAST Texas, during the past week, became a doubly important factor in the crude oil situation of the country. On top of the apparently increasing hot oil production and thefts of crude, a new producing section was discovered by a well which flowed 25 barrels an hour of 40 gravity crude of the same type as found in the main East Texas Field. The new producer is located about six miles southwest of the town of Rusk, in Cherokee County, and geologists are of the opinion a fairly large producing horizon has been opened. Hot oil producers in East Texas seem to be more active than for a long time with the result one estimate of this illegal production runs as high as 100,000 barrels daily. Little attention, apparently, is being paid to state regulations and the feeling has been growing the Federal oil control bill will be sidetracked at this session of Congress. It has been stated many times if the Federal measure is not enacted hot oil producers in East Texas will increase very materially their output during this summer and fall.

The gain in hot oil production coupled with the substantial increase in allowables which became effective June 1 constitute a menace to the crude oil market structure. Fortunately consumption has been registering good gains, otherwise the situation would be much worse. However, it is merely a question how long legitimate producers and purchasers will be willing to do business at present posted prices when such a large production undoubtedly is moving to market at lower quotations. Passage of the Federal oil control bill would change the picture quickly as it is felt the government then would have adequate authority to stop shipments of crude oil and manufactured products in excess of quotas established.

Field development work continues at a high level in many sections of the country. Improved conditions in California, both from the standpoint of producers and refiners, have increased drilling operations and with further stabilization of conditions it is expected that state will witness increased wildcat exploration. West Virginia came to the front when a salt sand gas well in Gilmer County began to flow at the rate of 50 barrels of oil an hour after being drilled deeper to the Berea sand. It made 750 barrels the first day.

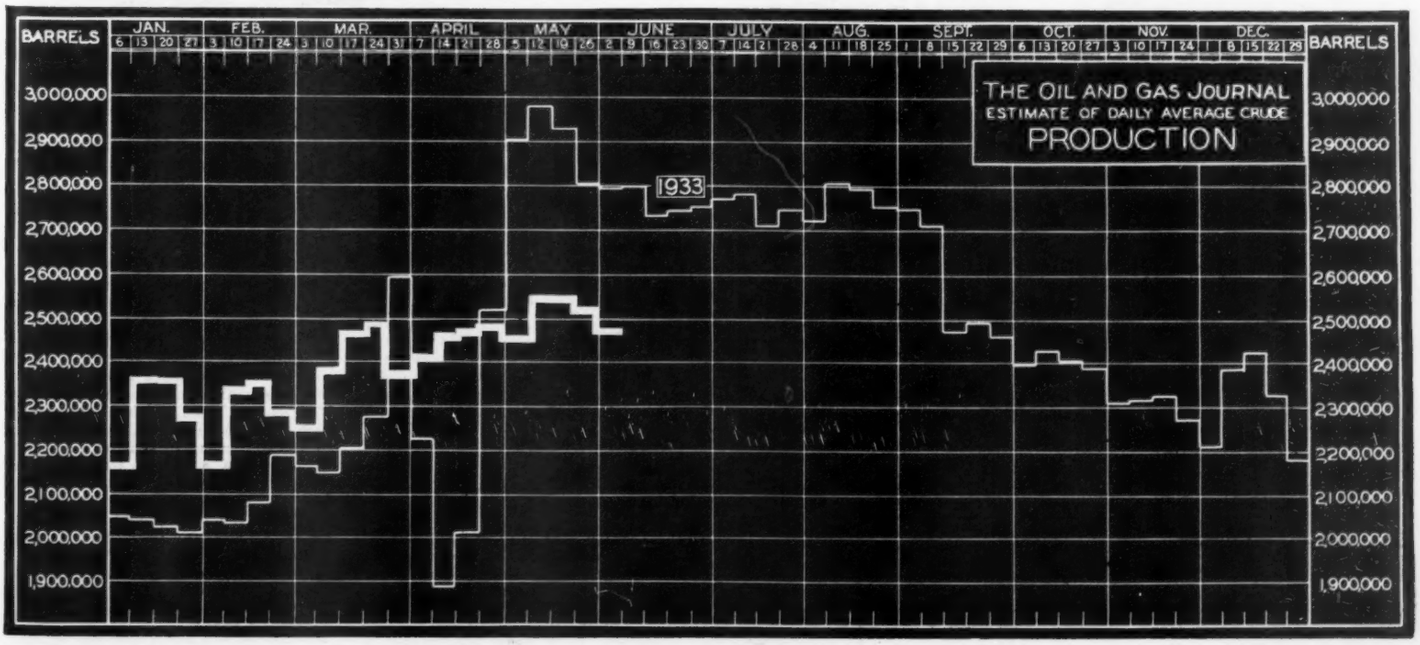
The Shell's discovery near Roanoke in Southern Louisiana has stimulated drilling in that section while there are five tests drilling and another ready to spud in Acadia Parish, La., within a mile of the recently opened Bosco Field. The Continental Oil Company completed a well in the Eunice Field in New Mexico which flowed at the rate of 152 barrels an hour. Activity continues at a high level in Osage County, Oklahoma, while recent good showings in Kansas have added to interest in that state.

Crude Oil Production in the United States

Estimated daily average production for the week ending June 2, a comparison with previous week and the Federal allowables follow:

	June 2	Federal allowable June	May 26
Oklahoma—			
Oklahoma City	158,455	.....	177,030
Seminole-St. Louis	86,585	.....	103,525
Remainder of State	231,915	.....	230,500
Total Oklahoma	476,955	511,700	511,055
East Texas—			
Lathrop	220,420	.....	214,820
Kilgore	160,210	.....	156,140
Joiner	142,920	.....	139,300
Total East Texas	523,550	.....	510,260
West Texas	137,413	.....	137,015
North Central Texas	89,465	.....	88,591
Texas Panhandle	59,144	.....	59,406
East Central Texas	51,355	.....	52,147
Gulf Coast—Texas	172,262	.....	173,155
Southwest Texas	47,705	.....	48,645
Total State of Texas	1,080,894	1,032,300	1,069,219
Kansas	132,125	130,300	132,900
North Louisiana	25,310	.....	25,560
Gulf Coast—Louisiana	64,115	.....	57,155
Total Louisiana	89,425	83,000	82,715
Arkansas	30,895	33,000	30,620
Eastern Fields (except Michigan)	100,750	108,900	99,100
Michigan	33,675	32,800	32,575
Rocky Mountain area	88,820	96,000	87,480
California—			
Santa Fe Springs	40,250	.....	39,250
Long Beach	63,250	.....	63,750
Mountain View	6,750	.....	8,500
Elwood	10,000	.....	10,250
Kettleman Hills	58,500	.....	62,000
Remainder of State	279,250	.....	297,250
Total California	458,000	500,300	481,000
Total United States	2,491,539	2,528,300	2,526,664

Decrease 35,125 Bbls. Daily.



Gun Perforation of Wells Successful at Bosco; New Procedure in Testing Sands Described

By NEIL WILLIAMS
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., June 4.—In the recent completion by Superior Oil Co. of California of its discovery well at Bosco, in Acadia Parish, Louisiana, a new procedure in testing of sands was introduced to the Gulf Coast. This involved a method, particularly adaptable to deep wildcats, by which it is possible for an operator to carry a hole to low horizons in geological exploration before testing any sands which might be encountered.

Normal practice calls for the testing of all potentially productive sands as they are drilled. This has many disadvantages in the proving of a wildcat area, especially on the Gulf Coast where numerous sands are to be expected. Completion of a well in an upper sand limits knowledge of the underlying sands, formations and structural conditions, and there always is a question as to whether it is best to run casing and test a certain sand or drill deeper on the chance of finding something better.

Drill stem tests facilitate the determination of a sand's importance but whenever casing is run to test a reduction in hole is necessary in the event of later deepening. To drill on without running casing and then plug back if something better is not found requires a plug back job and these are not always satisfactory.

New Procedure

Superior Oil Co., anxious to learn quickly the full potentialities of the Bosco area in its first test because of a number of pending drilling obligations, attempted the new procedure of drilling down as far as it was considered expedient, run a full string of casing, and then test the various sands in order as desired by perforating the casing at the respective sand depths.

This well, No. 1 Hermandes, went to a total depth of 8,916 feet, carrying open hole from 5,947 feet where a string of 9⅝-inch casing was run for protection. This was a total of 2,969 feet of open hole. In this, a number of sands showing oil and gas were passed, one being in the Discorbis zone, another in the Heterostegina, two in the Marginulina, and a fifth in the Frio at the bottom of the hole. Through these sands to a depth of 8,830 feet 7-inch casing was run and cemented before any tests were made.

The depth of these sands is indicated by the fact that the Discorbis was topped at 7,629 feet, the Heterostegina at 7,940 feet and the Marginulina at 8,360 feet. All depths are actual but elevation is 53 feet. In addition a number of shallower sands in the Miocene, overlying the above Oligocene zones, also were passed up.

Incidentally, the 7-inch casing was the longest string of that size pipe that had ever been run in a Gulf Coast well, and, being of 30-pound material, it made a load for pipe alone of 264,900 pounds.

With the setting and cementing of the casing it was the plan of the company to perforate the casing at the various sand levels, one at a time, and test through the perforations the sands successively from top to bottom. The first sand tested was the uppermost one in the Discorbis and perforation was made at 7,845-50 feet. If a test of that sand had failed, the perforations would have been plugged off and the other sands in order would have been perforated and tested.

However, the well made such a favorable showing in the test from the first perforation that there has been no occasion for perforating and testing any of the other sands although the others remain for potential new production when the well plays out in the first sand. The remaining sands have been looked upon as being even better than the first which was tested.

The well came in flowing at the rate of 31½ bbls. per hour through a twelve-sixty-fourths-inch choke with a pressure of 1,360 pounds. No screen was set and the production is through the drill pipe, which has been left in the hole. Of particular significance is the fact that the cement plug was not drilled out and the bottom of the casing serves as a sump for the accumulation of oil. Gravity of the oil is approximately 34 A.P.I.

Gun Perforation Used

Perforating of the casing was done by a comparatively new method, namely gun perforation, in which a succession of steel bullets are fired through the casing by means of an electrical detonation of powder. This method was originated by the Lane-Wells Co. on the Pacific Coast while operation of it on the Gulf Coast has been licensed by the Texas Iron Works Sales Corp. of Houston. The Superior well was the first on the Gulf Coast in which this perforator was run.

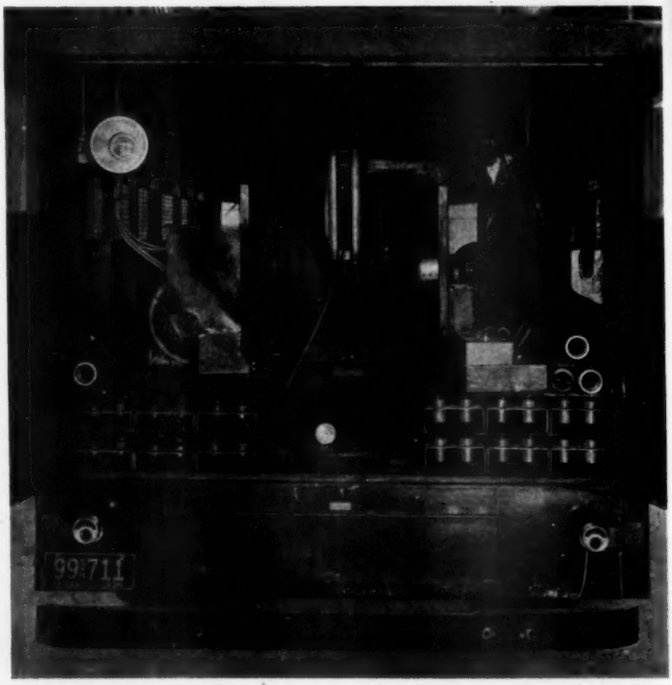
In perforation by this method, a gun, consisting of a cylindrical tool carrying the shot containers screwed into openings provided and properly spaced in the walls of the gun, is used. Each of the containers is loaded with a charge of black powder and a steel bullet. Through a conductor extending the length of the center of the gun, each container makes electrical contact with a distributor which is screwed into the head of the gun and which fires the shots in rotation as controlled by a switch on the surface. The firing is done by means of a small high resistance filament around which the powder is packed, 30 volts being required to discharge the powder. This is ordinary slow burning black powder and the discharge exerts a propelling force of 140,000 pounds per square inch back of the bullet, which is sufficient force to cause the bullet to pierce one or more strings of casing as well as the cement filling the annular space around the casing.

The gun is lowered into the hole by wire line, the center strand of which is an insulated conductor which transmits the electrical current to the distributor head. Direct current is used in firing the shots, this being supplied by an 110-volt D.C. generator. The latter is run by a small A.C. motor, which in turn is driven by a 110-volt A.C. generator powered with a four-cylinder Universal gasoline engine.

Self-Contained Truck

All this equipment, together with a reel hoist and approximately 9,500 feet of seven-sixteenths-inch wire line, is carried compactly on a self-contained and enclosed truck. The hoist is operated by a drive from the truck motor. All controls and instruments are centralized at a convenient place in the front of the truck and can be handled by one operator. the equipment also includes a weight indicator and a device for measuring automatically the wire line into the hole. Both of these are synchronized electrically with the instruments on the control board and are operated with current supplied from the A.C. generator.

When the gun is in the hole at the correct depth, the shots are fired, one at a time, by a switch on the instrument and control board.



Interior of self-contained truck (rear view) carrying equipment used in gun perforation of wells. In center toward front is reel hoist wound with 9,500 feet of wire line by which the gun is lowered into the well. At the left is the AC generator powered with a 4-cylinder gasoline engine. Under this are the shelves with the powder and shot containers which are screwed into the gun barrel. At the right in the back corner is the small DC generator which supplies the electricity for firing the shots, the electricity being transmitted to the gun at the bottom of the well through a conductor woven into the wire line

Controls and instruments of gun perforation truck used by Texas Iron Works Sales Corp. in perforating Gulf Coast wells

Committee Delays Hearings on Oil Control Bill With Increasing Doubt About Its Enactment

By HUGH D. MALLON
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., June 4.—Action on the Federal oil control bill is slowing down. The position taken by Representative Rayburn, chairman of the House Committee on Interstate and Foreign Commerce, in granting four hours' discussion to each side instead of two hours as was originally planned, delayed the bill considerably. His limitation of the hearings to morning sessions only is further delaying action, and on Friday the chairman adjourned hearings until Tuesday, June 5. It has been learned that the hearings will not be finished Tuesday, but will go over at least until Wednesday. Upon the completion of the hearings it will be at least another week before the committee reports the bill out.

This additional week will be taken up with executive sessions of the committee, at which it is understood the subject of pipe lines will be gone into very extensively. There is a feeling among members of the committee that some action should be taken at this time to further regulate pipe lines, several members advocating their divorcement.

The dilatory tactics of the House committee have already greatly decreased chances for the passage of this bill at the present session, and it is unlikely it will be acted upon without great pressure and the full co-operation of individual members of both houses. It is generally conceded that if the question of pipe lines is brought up in connection with this bill, it will practically kill any possibility of action on this measure before Congress adjourns.

The hearings before the House committee started May 30. They were opened by Representative Disney, of Oklahoma, who introduced the bill in the House. He explained the features of the measure and pointed out that this type of regulation is essential to the welfare of the industry. A return to the chaos and disruption of the first part of 1933 was forecast if this measure is not passed.

Mr. Disney stated that the decision of the Circuit Court of Appeals in New Orleans in the Panama and Amazon cases does not remedy the situation entirely, but merely gives to the administrator the right to issue orders and regulations, which, if adhered to by the state regulatory body, may be enforced by the administrator. If the state body does not follow the orders of the Federal Agency, enforcement by Secretary Ickes is questionable and open to attack in the courts.

Essential, Says Ickes

Secretary Ickes, oil administrator, followed Mr. Disney with the statement that this regulation was absolutely essential if permanent recovery of the industry was to be accomplished. He pointed out that in the spring of 1933 state regulatory bodies were functioning in only three of the producing states, and that in those states the regulatory bodies allowed production of crude oil far in excess of the market demand. This situation, the secretary said, caused oil to go to as low as 10 cents a barrel and unloosed a flood of "hot" oil which amounted to hundreds of thousands of barrels daily.

In answer to a question by one of the committee members as to whether prices would be fixed under this measure, Mr. Ickes replied that no attempt was being made to fix prices, and that the primary purpose of the bill was to control the production of crude to consumptive demand. Competition among the companies in the industry, the secretary added, would effectively keep down the price.

Under the code, Mr. Ickes stated, he was charged with the obligation of improving conditions generally, and not for the major or the independent companies, individually. However, he said, some elements of the industry would like to evolve a plan which would insure a profitable business for the independents and keep the majors from making any return on their investment. "I have never been able to devise such a plan," said Mr. Ickes.

Judge Beaty's View

Judge Amos L. Beaty, chairman of the Planning and Coordination Committee, delved into the constitutionality of this bill and demonstrated very clearly that this measure will be enforceable by the courts if passed.

In a statement which he filed after the conclusion of his remarks, Judge Beaty covered the economic and physical wastes which follow in the wake of uncontrolled production. He pointed out that when the market is depressed due to an oversupply of crude, the high operating costs of stripper wells make their continuance uneconomic and force their abandonment, with the consequent permanent loss of the oil.

Attacking the insertion in the Disney bill of a section limiting its effectiveness to a period of two years, Judge Beaty compared the pending measure with the statutes of Kansas, Oklahoma and Texas, which set up those state regulatory bodies. In this connection, he said, "No one believes that the days of flush pools and overproduction are ended and that in the future we shall have nothing except a beautiful balance, or a possible shortage of well oil and gradual utilization of coal and shale. Those who profess to believe that nature will work a cure of that kind must have some other thought in mind. Two years or five years would be only a breathing spell. It was not a breathing spell that was sought when Oklahoma, Texas and Kansas adopted their statutes, and no one ever thought then of inserting a time limit in the oil law."

Warning From East Texas

Appearing in behalf of the bill, Carl Estes, Tyler, East Texas, warned the committee that unless Federal control of the oil industry becomes an actuality before Congress adjourns, the industry will be controlled by "a few greedy oil thieves in East Texas who are certain to sack, loot and ruin that great oil field in order to take, in the dark hours of midnight, for personal gain, that which is their neighbor's property. They will do it inside of a week after this Congress adjourns unless some character of assistance to the Texas Railroad Commission is afforded by you."

Appearing in opposition to the bill was Elwood Fouts, attorney, Houston, Tex. He argued this type of legislation was not conservation nor in any way connected with that subject, but on the contrary an attempt to foster monopoly and to fix prices. He asked "Is it a matter for Congress to burden the consumer with the most expensive method?" Mr. Fouts asserted Secretary Ickes intended to bring every branch of the industry into regulation, thereby violating all rights of the states and discouraging that rugged individualism which has been prevalent in the industry in the past. He admitted, however, that 90 per cent of the producers in East Texas are in favor of the bill.

Among those appearing on behalf of the bill were Harold B. Fell, executive vice president, Independent Petroleum Association of America, and A. S. Heck, oil producer, Spencer, W. Va., representing Gov. H. G. Kump of West Virginia. David B. McCalmont, representing the Pennsylvania Grade Crude Oil Association and the Central District Oil Producers Association of Pennsylvania, told the committee many of the small wells drilled after the war had not paid for themselves and never will. Others drilled in 1928-29 have never had a chance to pay for themselves.

Two by-passes from one separator in the East Texas field. Note one underground at the left of the separator and the other underground (now dug out) at the right of the picture. The picture portrays vividly a small part of the illegal methods of operating and producing leases in some parts of the East Texas field, especially in the Gladewater Townsite

Two underground by-passes on one well in the Gladewater Townsite. The regular flow line cannot be seen because of plank in top part of picture. Lines were connected at the two valves shown below ground, but have been taken off, as shown here. These lines were doing the "dirty work". The owner of the lease said she was not getting royalty on the overproduced oil, and has asked for a receivership for the company operating the well

Board of Review Approved

Secretary Ickes has announced the approval of the following members of the Board of Review: W. R. Boyd, Jr., executive vice president of the American Petroleum Institute; P. M. Miskell, Empire Oil & Refining Co.; C. B. Watson, presi-

dent, Pure Oil Co.; Charles B. Buerger, vice president, Gulf Refining Co., and A. C. McLaughlin, executive secretary, refining committee, Region 8, Los Angeles, Calif. Mr. Boyd was appointed chairman.

The Board of Review, created under the recently approved amendment to the refinery section of the code, will review the findings and allocations of district allocators and the national co-ordinator.

The board held its first meeting this morning, at which time it adopted rules of procedure for hearing complaints and set up the groundwork of the organization. This afternoon hearings were started on complaints already received, and early decisions are expected. Approximately 20 complaints have been sent to the board so far, among which are the following companies: Globe Oil & Refining Co., Pan American Oil Co., Continental Oil Co., Dickey Oil Co., Barnsdall Oil Co., Empire Oil & Refining Co., Skelly Oil Co., Standard Oil Co. of Ohio, Cushing Oil Co., Tide Water Oil Co., Taxman Refining Co., Super Asphalt Producers, Magnolia Oil Co., Phillips Petroleum Co., Texas Co., Deep Rock Oil Co., and Mid-Continent Petroleum Corp.

Strengthening Marketing Code

Strengthening of enforcement of the marketing provisions of the oil code was announced by Secretary Ickes, as oil administrator.

"Numerous complaints of violations of the marketing provisions of the code have come to me in recent weeks," the administrator explained, "and I have ordered the Petroleum Administrative Board to take immediately any steps necessary to prevent further violations.

"I feel that perhaps part of the violations are unintentional, and attributable to articles widely published about two weeks ago, which gave the impression that provisions of all NRA codes affecting retail dealers would not be enforced locally. This does not apply to those who remain under the provisions of the oil code.

"The majority of the marketing division of the oil industry, I am happy to be able to say, is making an honest effort to comply with the code. They should not be penalized by the loss of their business.

"Under my direction, a number of investigations are under way to determine the truth of the various complaints. I believe our action, when completed, will demonstrate that we intend to enforce the marketing sections of the code which the industry, in submitting its code to the President for approval, agreed were necessary to eliminate unfair practices."

Report on Asphalt

During February a special fact finding committee was appointed by the Planning and Coordination Committee to make a study on the availability, quality and cost of domestic asphalt. This committee is submitting its report to the Planning and Coordination Committee today. It has also made a study along these lines of foreign asphalt and is submitting a comparative report on the two products. The committee is composed of A. E. Watts, Consolidated Oil Corp., chairman; J. L. Quinn, Standard Oil Co. of California; T. H. Barton, Barton Oil Co.; L. V. Nicholas, Warner-Quinlan, and E. B. Swanson, member of the Petroleum Administrative Board.

The new agreement designed to stabilize the industry on the West Coast has been submitted to Administrator Ickes. Mr. Ickes refused to approve any agreement of that nature prior to its approval by the attorney general. This proposal is now in the hands of the attorney general, and it is reported, he is considering the instrument favorably.

A large delegation from California, representing all branches of the industry in that state, is here, urging speedy approval of the agreement.

Equipment Code Personnel

National Recovery Administrator Hugh S. Johnson today approved the method of selection and recognized the personnel of the code authority for the American petroleum equipment industry and trade. They are:

Chairman, W. L. Childs, vice president Reed Roller Bit Co., Houston, Tex.; vice chairman, J. A. Crawford, president Republic Supply Co. of California, Los Angeles; Percy C. Jones, president S. M. Jones Co., Toledo, Ohio; J. A. Geismar, vice president National Supply Co. of Delaware, Toledo, Ohio; B. F. Harris, president Oil Well Supply Co., Pittsburgh, Pa.; H. J. Lockhart, president Parkersburg Rig & Reel Co., Parkersburg, W. Va.; E. S. Dulin, president Byron Jackson Co., Los Angeles; D. S. Faulkner, vice president National Supply Co. of California, Torrance, Calif.; L. H. Keim, vice president Oil Well Supply Co., Los Angeles; F. C. Merritt, president Elliott Core Drilling Co., Los Angeles; W. A. Trout, vice president Emsco Derrick & Equipment Co., Clearwater, Calif.; J. L. Shakely, vice president Frick-Reid Supply Corp., Tulsa; F. E. Bernsen, president Lucey Products Corp., Tulsa; A. A. Bushow, president Bridgeport Machine Co., Wichita, Kans.; Earl W. Miller, vice president American Iron & Machine Works Co., Oklahoma City; A. A. Moody, vice president Jarecki Manufacturing Co., St. Louis, Mo.; W. J. Morris, president Continental Supply Co., Dallas, Tex.; F. S. Carothers, manager Norvell-Wilder Supply Co., Houston; B. Boykin, Jr., vice president International Derrick & Equipment Co., Beaumont, Tex.; Stanley P. Brown, vice president Hughes Tool Co., Houston; John T. Crotty, president Republic Supply Co., Houston, and T. T. Word, president Word Supply Co., Houston.

Irwin Lamp Now Secretary P. and C. Committee

IRWIN LAMP

FRED VAN COVERN

WASHINGTON, D. C., June 4.—Irwin Lamp, office manager of the Planning and Coordination Committee, was made secretary of the committee today, succeeding Russell B. Brown who recently was appointed compliance director. Fred Van Covern, economist and statistician of the committee, was appointed assistant treasurer, a position formerly held by Mr. Lamp. Henry M. Dawes is treasurer.

Three Directors Retire From New Jersey Board

NEW YORK, June 5.—At the annual meeting of the Standard Oil Co. of New Jersey here today the resignation of three directors who live in Europe were announced. J. A. Mowinckel and H. G. Seidel, two of the directors who resigned, will continue to have active charge of the foreign operations with which they have been connected for several years. Peter Hurll, the third director, retires due to ill health. He spent 26 years in the foreign service of the company and has been a director since 1928.

It was stated at the meeting that it was found impracticable for directors of the parent New Jersey company to serve as members of the directorate and at the same time be actively in charge of foreign operations. In the future foreign operations will be represented on the board by members who reside in this country.

Fire Proof House Constructed Around Connections of Texas River Wells

By L. E. BREDBERG

It is important in producing river bed wells in Texas to take every precaution to prevent damage to well casing, connections and christmas trees, which might allow the wells to flow wild, pollute the streams or catch fire. The blazing oil traveling down the streams might ignite other wells or set fire to forest and crops along the stream beds thus throwing the operating companies open to many damage suits.

Operators who have producing wells in the Sabine River in Gregg County, Texas,

have driven strong pilings around their wells, placed caissons around the casing and tubing, and have also set concrete foundations around the wells to prevent floating debris brought down by high waters, from injuring the casing or connections and causing the wells to flow wild.

The Rhoads Drilling Co. of Fort Worth has gone a step further in arranging protective equipment around its 64 wells in the Sabine River. George K. Taggart of the company, Fort Worth, designed as near a fireproof house around the christmas trees as possible. These houses are being made in the company's shops east of Gladewater, and cost around $40 per house, or well.

The framework of the houses, which are called "christmas tree" or "doghouses," is made of 4-inch angle irons welded together at all corners. The dimensions of the houses are 30 inches by 42 inches by 54 inches, which gives ample room for the fittings on top of the well, and allows sufficient room for the men to reach in to turn the valves to shut in the wells or open them.

On top of the framework is bolted Johns-Manville corrugated building board, which is composed of asbestos and cement. The houses are set on top of the 30-inch caissons which are raised about 30 feet above the water, or plenty high enough to be above the water when it is at flood stage. Inside of the caissons, and between it and the surface pipe is cement, to give still further combative powers against the strong currents of the river. The houses are bolted into the cement on top of the caissons, thereby anchoring them rigidly. A padlocked door is provided on the bank side of the houses to allow the production men to get at the valves when necessary. These doors have a welded angle iron framework covered with the same asbestos material, and the padlocks prevent thieves or other marauders from tampering with the wells or stealing oil therefrom.

The accompanying picture shows one of the christmas tree houses in place over a Sabine river bed well owned and operated by the Rhoads Drilling Co.

Explosion Kills Seven of Geophysical Party

An explosion of dynamite on the afternoon of June 4 on a country road about 2 miles south of the Norman-Chickasha highway on the west side of the Canadian River caused the death of seven members of a geophysical field party. Six of the dead were employed by the Petty Geophysical Engineering Co., San Antonio, Tex., and one man was working for the Sinclair Prairie Oil Co.

The dead are: Preston Barnes, Guthrie, 20 years old, married; Lloyd Flood, Norman, 26 years old, married, graduate of the university; Herman Voigt, Perry, 29 years old, single; Don McDonald, San Antonio, Tex., 22 years old, single; Dave McClelland, Santa Anna, Tex., 37 years old, married; V. H. Weddell, Chandler, 26 years old, single, graduate of the University of Oklahoma; and Joe Fannin, May, Tex., 29 years old, single.

Weddell was a water carrier in the employ of the Sinclair company. The others were employes of the Petty Geophysical Engineering Co. of San Antonio with a branch office in Norman in charge of O. S. Petty.

The Petty Geophysical Engineering Co.'s party was working under a contract with Sinclair Prairie Oil Co. and securing geophysical data upon a lease owned by the oil company, and only one member of the geophysical party escaped death. He is Weldon Crawford, field manager of the crew, and he was at the instrument truck some distance from the point of the explosion.

The others were grouped around a shot hole, but it is not known what caused the dynamite to explode or what particular operation was being carried on when the explosion occurred.

Many Angles to Chemical Treatment of Water to Assure Suitable Supply for Refineries

By DANIEL IRWIN

Utilization of Water in Petroleum Refining

When it is realized that a refinery processing 40,000 to 50,000 barrels of crude oil daily in a complete plant operation will often use as much water as a city of 100,000 population it is apparent that the production and utilization of water is a major phase of any manufacturing operation in the oil industry. In building a new refinery or natural gasoline plant a water supply of suitable quality or quantity is rarely found. Operators enlarging their plants are often confronted with the problem of securing additional water. In certain sections water supplies for plant operation vary both as to quality and quantity.

Directly connected with the various utilization of water in oil refining is the matter of chemical analysis and treatment. As more and more has been learned about the properties of water in relation to maintenance of equipment and treatment of finished products it has been because very little water is satisfactory for use untreated. Every refiner may profitably consider water treatment even to the removal of dissolved gases in soft or distilled water.

The discussion in this article is largely confined to water that would come under the classification of hard but not polluted by mining or chemical manufacturing. The treatment is limited to the preparation of water for refinery purposes. Later articles will deal with other phases of the water problem at refineries including disposal after use.

Foreign matter in water as made available to refineries often consists of (1) floating objects which can be screened out, (2) substances in suspension that give turbidity which can be settled or filtered out and (3) matter in colloidal form that may be coagulated. The substances, ordinarily calcium and magnesium salts in solution impart hardness to water. The removal of this hardness is the principal objective of water treatment, together with the filtering and coagulation of the precipitated substances.

Carbonic acid from natural inorganic reactions and from the organic digestion of waste and sewage is formed in water. This in turn forms soluble bicarbonates of calcium, magnesium and iron. This is the cause of temporary hardness. When heated, with dissociation of the carbonic acid, the bicarbonates become carbonates, and the latter are but very slightly soluble and will precipitate out. Calcium sulphate with water and forming gypsum, is soluble in water that has a trace of sodium chloride present. This is known as permanent or fixed hardness. Magnesium and iron sulphates likewise add to the permanent hardness. For simplification only the principal elements are included; potassium, sodium, ammonium, magnesium, calcium, iron and aluminum are the common basic ions that may be combined with the nitrous, nitric, chloride, sulphate and carbonic acid ions.

Water Softening Processes

Water softening processes are concerned with:

1. Conversion of soluble bicarbonates to insoluble carbonates.

2. Formation of a filter mass or floc; a gelatinous insoluble sponge that will coagulate and adsorb precipitates and other substances originally in the water or formed in the treatment processes.

3. Replacing the calcium (magnesium, iron, etc.) sulphates with sodium sulphate, both of which sulphates are soluble, but the latter is not objectionable except in excessive amounts.

4. Replacing excessive amounts of sodium sulphate that may be formed in 3 with the insoluble barium sulphate.

Any water treating or softening process should include as many of the above objectives as render the water suitable for use, and inadequate treating will seldom be justifiable.

General classifications of waters might be based upon the total hardness found on analysis, in grains per U. S. gallon, as follows:

Rating—Very good, good, fair, bad, very bad.

Grains—To 5, 5-10, 10-15, 15-20, over 20.

Public records of waters in the United States[1] will give the values of bicarbonates, sulphates, etc., in parts per 1,000,000. To convert such values to grains per gallon, the following relations are useful:

1 part per 1,000,000, grain per gal...	0.0584
1 gram (1 cc.), grains	15.43
1 U. S. gallon (water), grams	3,785
1 U. S. gallon (water), grains	58,402
1 pound, grains	7,000

In sampling and testing[2] if 58.4 cc. of water are taken, the weight of substances found in solution or otherwise, as found in milligrams, may be read directly as grains per gallon[3].

Table 1 gives the three samples of waters; A, a soft water usable without treatment; B, a hard water that may be treated to remove temporary hardness, the calcium and magnesium bicarbonates; C, a hard water requiring treatment for any industrial use, especially for steam making. None of the samples, A, B or C are extreme cases of a very soft water or a very hard water. A lower limit for soft water might be 2 grains per gallon and an ordinary hard water might contain 40 or more grains per gallon, total hardness.

The elementary basic natural reaction is:

$$Ca\,CO_3 + H_2CO_3 = Ca(HCO_3)_2$$
(calcium carbonate) (carbonic acid) (calcium bicarbonate)

$Ca\,SO_4\,2\,H_2O$ (gypsum) is dissolved

TABLE 1

Materials in anaylsis—		Grains per U. S. gallon A	B	C
Sodium chloride	$Na\,Cl$	0.24	0.30	0.48
Potassium carbonate	KCO_3	0.35	....	....
Sodium bicarbonate	$Na\,HCO_3$	0.88	....	....
Potassium sulphate	$K_2\,SO_4$	0.12	....	....
Sodium sulphate	$Na_2\,SO_4$	0.35	0.53	0.35
Sodium nitrate	$Na\,NO_3$	0.06	0.24	0.41
Calcium carbonate	$Ca\,CO_3$		See bicarbonate	
Calcium bicarbonate	$Ca\,(HCO_3)_2$	1.45	1.75	10.00
Ferrous bicarbonate	$Fe\,(HCO_3)_2$	0.12	0.12	0.06
Magnesium bicarbonate	$Mg\,(HCO_3)_2$	0.65	2.90	7.90
Calcium sulphate	$Ca\,SO_4$	....	....	3.40
Total hardness, grains		4.22	5.84	22.60

Origin of Hardness

The origin of substances causing hardness in water lies in natural and artificial conditions at the source or in the path of flow of water. Acids, particularly carbonic acid from decay and digestion of waste, acting on limestone accounts for the greater part of temporary hardness. Sodium chloride (salt) in water renders gypsum soluble and this accounts for the major part of the permanent or fixed hardness, that caused by calcium sulphate. With the rennaissance of brewing and alcohol distilling, and with the extension of sanitary sewage disposal the refiner will find changing water conditions apart from water polution. Even from natural causes, sources of water supply will vary considerably from season to season and year to year, so that periodic analyses and adjustments of water treating processes must be made.

in slightly saline water (see $Na\,Cl$ = 0.48 grain; water sample C).

Processes

A brief description of the common processes will indicate the simple chemical reactions involved, and the results that may be obtained. Any practical process will be a combination of two or more parts, depending upon the desired results and the conditions of the water supply.

A. Zeolites—Processed glauconite and synthetic zeolite are insoluble compounds that convert calcium bicarbonate to a sodium bicarbonate and calcium sulphate to a sodium sulphate, the products of the reactions being unobjectionable in the treated water. The choice of the zeolite is dependent upon the duty required, processed glauconite takes up 2,800 to 4,800 grains per cubic foot, the synthetic zeolite 6,000 to 20,000 grains hardness. The general composition of the zeolites may be represented as:

$$Na_2O.Al_2O_3.(SiO_2)_x.(H_2O)_n \text{ or } Na_2Ze$$

The reactions of water softening are:

$$Ca(HCO_3)_2 + Na_2Ze = 2\,NaHCO_3 + CaZe$$

$$CaSO_4 + Na_2Ze = Na_2SO_4 + CaZe$$

The spent compound, $CaZe$, is restored to an active state, Na_2Ze, by washing the spent compound with a salt water solution (sodium chloride).

B. Lime: Calcium hydroxide—Lime, CaO, hydrated to $Ca(OH)_2$ is used to convert the magnesium bicarbonate to magnesium hydroxide, the latter insoluble, and magnesium sulphate (if any) to magnesium hydroxide and calcium sulphate.

The reactions are:

$$Mg(HCO_3)_2 + Ca(OH)_2 = Mg(OH)_2 + Ca(HCO_3)_2$$

$$MgSO_4 + Ca(OH)_2 = Mg(OH)_2 + CaSO_4$$

C. Soda Ash: Sodium carbonate—Soda Ash, Na_2CO_3, is used either alone or with lime or other materials, and is principally to convert the calcium sulphate (permanent hardness), that is scale forming and objectionable, to the soluble but unobjectionable sodium sulphate.

The reaction is:

$$CaSO_4 + Na_2CO_3 = CaCO_3 + Na_2SO_4$$

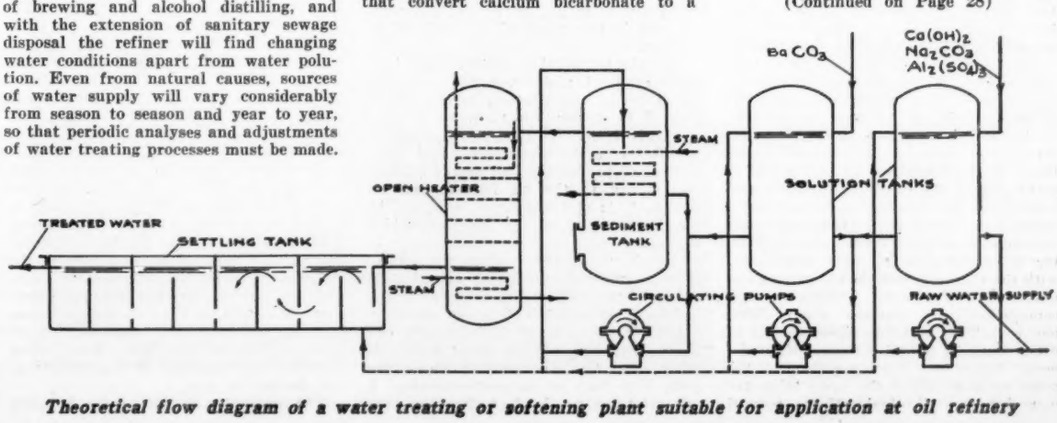
D. Heating Effect: Indirect steam—Calcium, magnesium and other bicarbonates that cause temporary hardness, may be converted from the soluble bicarbonate to the insoluble carbonate by heating. The carbonic acid is disassociated by heat. Heating will also remove any dissolved oxygen from the water, this dissolved oxygen being a cause of corrosion of iron. The heating of water is the elementary treating that is necessary for even distilled water, if corrosion is to be avoided.

The reaction is:

$$Ca(HCO_3)_2 \rightarrow CaCO_3 + CO_2 + H_2O$$

The calcium carbonate, $CaCO_3$, is in-

(Continued on Page 28)



Theoretical flow diagram of a water treating or softening plant suitable for application at oil refinery

Oil Industry Accomplished Much Under Code; Federal Control Bill With Time Limit Will Aid

By M. L. BENEDUM

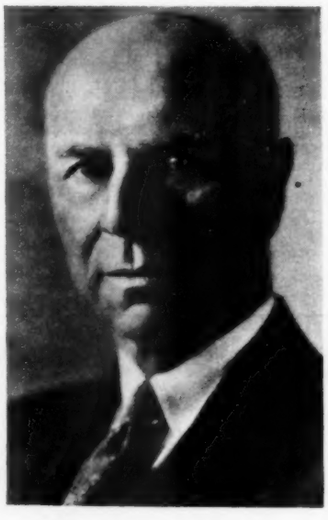
From despair to hope, from 10-cent oil to $1-oil, from frantic overproduction to a balanced output—this is the change which the American petroleum industry has enjoyed in the brief period which has elapsed since the code of fair competition for this industry went into effect early in September of last year. The millenium has not arrived for this industry any omre than it has for any other. We are, however, out of the slough of despond and if we are not in the promised land we are at least in the condition where we can believe in one. Many of the fundamental evils of the industry have been remedied and some of them have even been cured. Abuses which had been practically considered as inevitable and inherent in the very nature of our business are now branded as unfair and unethical and have been discarded by all except that fringe which is found in every industry and in every group of humanity who refuse to conform to law and order.

None of us likes to recall the conditions which were prevalent up to September, 1933. None of us would willingly return to them. They constitute a bitter memory and should convey a lesson whenever we are disposed to quarrel about some of the minor details in the present program, forgetting the tremendous gains beside which those details are insignificant. The present code is not perfect. It is not being administered by supermen. All of us can find flaws, if we hunt hard enough. We may be able to point to a mistake here and an error there. If we are small enough we will do that. There are a very few who are doing it today. But when we look at this industry fairly and honestly and note the vast improvements which have occurred in a little over eight months, we will not see the spots on the sun, but we will see a resurrection, a new tide of life, a new age dawning.

Work of P. and C. Committee

I have had the privilege to serve as one of the President's representatives on the Planning and Coordination Committee, and because of that appointment I have had an opportunity to watch the various steps by which outstanding men in the industry have given the very best of their thought, forgetful of self, to the great task of rebuilding one of the most important phases of the nation's industrial life. As you are aware, 12 men to represent the industry and three to represent the Government were appointed on that committee which now has been increased by the addition of 11. The first task faced by this committee was to learn the exact situation. We knew things were bad. Everybody knew things were bad, but we wanted a clear diagnosis of the ills which the industry was suffering.

The committee did not rely upon their own sources of information, but quickly organized regional committees composed of outstanding men all over the country. Under these regional committees, state committees were organized, and under these, local committees. In region and in state and in the local communities subcommittees to consider the problems of production, refining, marketing and transportation were formed, corresponding to similar subcommittees functioning with the Planning and Coordination Committee at Washington. These various committees now number about 7,000 members. They include representatives of every phase of the oil industry. Men who never before sat down together in the same room or about the same table are now bending all their efforts toward solving the very real problems faced by the industry. The major and the independent, the conservative and the radical, the rich man the poor man, the operator and the man who is merely a subordinate in some company, the head of a national company with hundreds of thousands of outlets, and the operator of a single filling station: all these find their place on various committees. No better method could have been devised



M. L. BENEDUM

by which to wipe out old-time jealousies and declare an armistice to ancient warfares than through this organization of committees which would include every type and every class.

Remarkable Achievement

The personnel of these committees is continuously changing. New men are being added. New ideas and new brains are being brought into the picture. Some men cannot give their time continuously, either because their interests are so great or because their interests are so small. This means that through these committees there continuously flows a stream of the best thought which the industry can develop.

These committees did not spring full-formed from any one's mind. They were the product of continuous growth. They enabled the Planning and Coordination Committee to effectively co-operate with the industry in any portion of the country and in any phase of its manifold activities.

Certain remarkable achievements have been attained under the code, through this form of organization, so remarkable that I must mention them as striking and valuable. Some time ago one of the petroleum associations estimated that control of production had meant $1,000,000 a day to the oil industry of the nation. This statement was analyzed by the Department of the Interior, which soon after put out its own statement in which it pointed out that the actual gains to the industry were somewhat in excess of the million dollars a day which had been estimated. This alone would be a notable achievement. This is only one phase, however, of the work which is being done for the industry under the code. For fear of misunderstanding, I call attention to the fact that the consumer has not been proportionately burdened because of those increased receipts. Any study of the prices of petroleum products will demonstrate that. Wasteful methods and destructive competition have been eliminated, however, in many respects, to the great advantage of the producing branch of the industry.

Beginning in April, 1933, the production of the United States exceeded 3,000,000 bbls. and continued very much above consumption until after the effective date of the code, September 2, 1933, at which time production had declined to about 2,450,000 bbls. Under the code, production declined to 2,330,000 bbls. by November 1, 1933.

The price of crude in May, 1933, was 25 cents per barrel; on August 1, 1933, 50 cents a barrel. Anticipation of the effect of the code had already raised the price of crude because the different state commissions had already begun to pare down the production in each state, preparatory to the formation of the code. Today the price of crude is $1.

Production has been held nearly to the actual consumption since the formation of the code. While admitting a slight amount of oil to be withdrawn from storage, at the rate it has been taken out, since the adoption of the code, it would take between eight and nine years to use up all the oil stored.

Optimism Succeeds Unrest

Before the code went into effect, there was a great deal of unrest throughout the industry. There is now an optimistic outlook and there is better co-operation between the different units in the producing end of the business than there has ever been since the production of oil began. Before the formation of the code, drilling was unrestricted in most sections of the country but under the code a plan of development is prepared for each new pool and must be along scientific lines before the administrator will approve it. This will, in my opinion, do more to bring about conservation than probably any other one thing.

Before the adoption of the code it was necessary for each state to determine what it thought was its share of the national market which resulted in a large overproduction in the nation. Under the code a disinterested administrator makes an estimate of the national demand and an impartial allocation between states which has worked much more satisfactorily than in the past.

The Refining Division

The refining division of the industry has not yet profited so much as the production section. This is not because of any lack of effort to solve the problems of the refiner. Repeatedly agreements of various kinds have been drawn up, discussed at length, revised, and then dropped in order that other agreements might be discussed. Now a national coordinator for refinery operations has been appointed, and it is hoped that the problems under which the refiner has been suffering for so long will be solved, and that this portion of the industry may be placed upon a sound basis. It is unfortunate that action for the benefit of the refiner has been delayed. However, the refinery problems have been so intricate and the task of securing common agreement has been so hard that only by an exercise of autocratic authority could any positive action have been taken earlier. Such exercise of authority was not desired by any.

The marketing section of the industry is today enjoying tremendous benefits from the portion of the code which refers to their interests. Many of the rules in Article 5 of the code have already accomplished their purpose and little or no complaint is heard concerning them.

There has been considerable controversy over Rule 3, but with the adoption of the various resolutions under this rule the sale of petroleum products to commercial consumers has, to a great extent, been placed on a profitable basis. Rule 3 has also brought prices out into the open and has almost completely eliminated the granting of discounts at service stations. The credit provisions as provided in Rule 5 and Appendix B has helped every company in collecting their accounts.

Rules 7, 8 and 9 with reference to equipment have rid the industry of the practice of promiscuously loaning equipment. Today when a consumer or dealer holds equipment they must purchase same with their own funds. Prior to the code it was thought impossible to ever think of getting rid of the loaned equipment evil.

Rules 12, 13, 14, 15, 16, 17 and 18 definitely disapprove of a number of bad practices. These rules are generally being followed. They have rid the industry of substitution, loaning money, paying rentals for advertising, breaching contracts, and the giving away of premiums, prizes, trading stamps, etc.

Personnel and Wages Increased

The labor issues have been as perplexing in the administration of the petroleum code as they have been in the administration of some other codes, although we have not had the serious trouble which has been experienced in some industries. The petroleum industry has kept its pledge to add to the numbers employed and to increase payrolls. The records of the committee, although their returns are not complete for any district, many of the smaller concerns not having reported, give us a basis for comparison at least. These reports, using comparable figures, show 403,771 employes, as of January, 1934, are accounted for, with a total monthly payroll of $51,001,053, as against 334,784 employes with a monthly payroll of $43,197,699 for the month of June, 1933, which is an 18 per cent increase in employment and a 16 per cent increase in earnings. In numbers, there is an addition of 68,987 new employes with an additional earning of $93,640,248 per year.

This comparison, unfortunately, does not represent a true picture, as we have compared June of 1933 with January of 1934. During January, due to the seasonal fluctuation and inclement weather, employment is curtailed and the demand for production is greatly lessened, whereas in June, the situation is reversed. In other words, we have compared the peak of production and consumption against the minimum.

Helps Other Industries

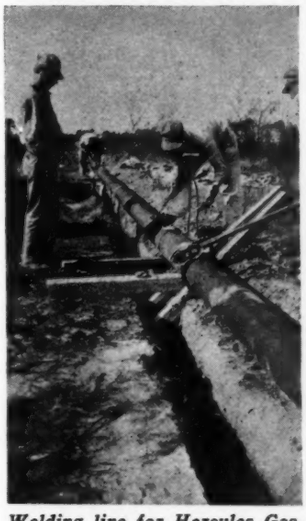
It would have been hard in September, 1933, to believe we could have achieved in the brief time which has elapsed since then so many things for the advancement of this industry. We have not yet reached the goals which we have set for ourselves, but we have traveled far from the demoralization of last summer. We are traveling steadily and surely toward better times and genuine prosperity for the whole petroleum industry. Each bene-

(Continued on Page 28)

Interesting Features Connected With Construction of Natural Gasoline Plants in East Texas Area

By W. MIKE MURPHY

At the beginning of 1933, with the natural gasoline market at two cents and falling to a point below a cent per gallon and with no positive assurance that oil production and refining would be limited to demand, clear-sighted courage was required to promote the construction of natural gasoline plants in the East Texas



Welding line for Hercules Gasoline Co. at Kilgore, Texas

Field and make the large investments necessary to place these plants in effective operation. At this time engineers and managers were making construction plans, locating sources of material, developing credit and interesting capital in the erection of plants, built later in the year, for the handling of gas from three thousand wells, or one-fourth of the total production of the East Texas Field. Following the establishment of fair practices in the production, refining and marketing of oil and its products, the market price of natural gasoline rose to five cents per gallon, creating a fully deserved reward for the promoters of these plants. At present, the demand for natural gasoline is expected to hold the market price fairly steady and yield continued earnings to the owners, as well as furnish profitable employment to capable people in the industry.

During the last year, J. B. Beaird, E. R. Ratcliff, L. J. Dales, and associates, successful oil operators in Arkansas, Louisiana and East Texas fields, quietly surveyed the area around Kilgore, Tex., and organized the Hercules Gasoline Co. for the construction of a natural gasoline plant near Kilgore on the Angus Spear Lease of the Gulf Production Co.

Construction was started under the personal supervision of L. J. Dales late in 1933 and the plant is now in operation. It is of the compression type and the greater part of the equipment was constructed by the J. B. Beaird Corp. in its shops at Shreveport, La. All of the piping in the plant is oxy-acetylene welded and welded storage tanks were also used. An interesting feature of this plant is that it is located on a railroad main line siding, obviating the piping of finished products a great dstance as is often necessary, thereby eliminating the loading losses of gasoline which are a factor in the operation of a natural gasoline plant.

Aircowelding was used in the construction of the gathering lines and much assistance was rendered by the field organization of the Air Reduction Co. in the welding of these lines under the direction of a member of that company's applied engineering department. The lines were completed in a minimum of time and at a cost considerably below the original estimates of the gasoline company.

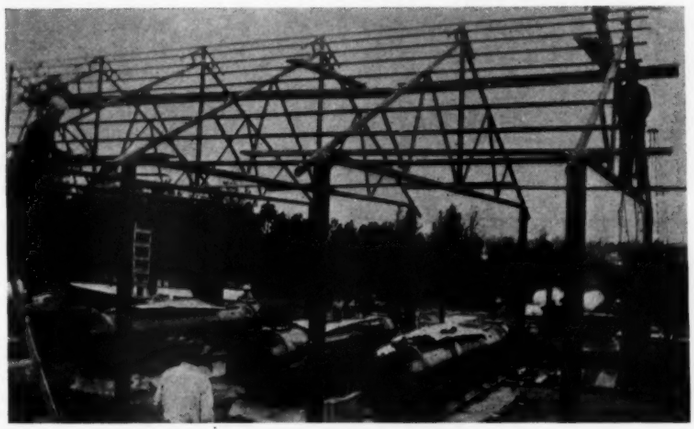
The offices of the Hercules Gasoline Co. are located in the Giddens-Lane Building, Shreveport, La., and the officers are as follows: J. B. Beaird, president; E. R. Ratcliff, vice-president; Melvin F. Johnson, secretary - treasurer; R. H. Frost, assistant secretary.

Gregg Tex Plant

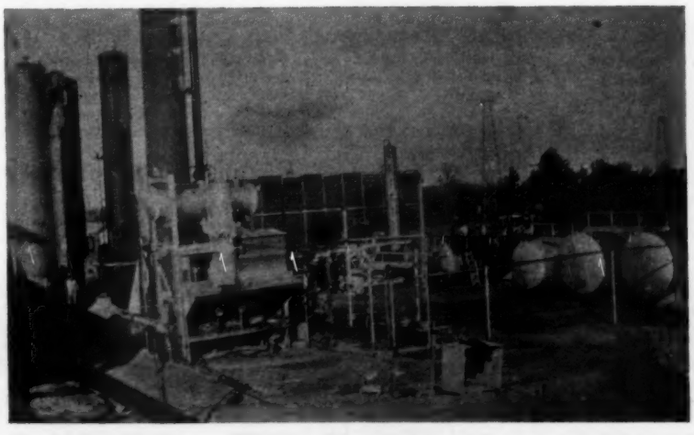
During the early part of the year, when there were numerous discouragements to organized business in general and the natural gasoline industry in particular, plans were under way for the organization of Gregg Tex Gasoline Corp. By H. R. Dickerson, Clark Sample, Keith Jones and J. W. Olvey and associates. This company took advantage of the prevailing low prices of material and equipment and the abundance of highly trained men available to build a plant, during the summer, on the W. R. Hughes in the Dolores Sanches Survey, of Gregg County. The plant, of the vapor rectification type, was designed and built under the general supervision of Keith Jones, who, by experience, is thoroughly acquainted with the engineering problems of the natural gasoline business in the East Texas Field. Mr. Jones was assisted on the work of construction of the plant by Supt. L. D. Phillips, who directed a capable organization including Howard Barry, Morris Rudy, Joe Weatherby and H. J. DeLatin. W. L. Morgan assisted in location of materials. John W. Lee served as general inspector of pipe line construction.

The gathering system of the plant consisted of a header of 18, 16 and 12-inch pipe, with laterals of smaller diameter, approximately 30 miles. The lines were Aircowelded throughout with engineering assistance furnished by the Air Reduction Sales Co. Welded residue lines were laid parallel to the gathering lines, making a total of more than 50 miles in the field lines. The gas enters the plant through a scrubber and 24-inch header connected to four Clark 400 horsepower compressors. The gas coolers, vapor column, and stabilizer are of the type designed by the Petroleum Engineering Co. of Tulsa. Regulators and process control equipment were furnished by Hanlon-Waters Co.

The plant was built to handle from 8,000,000 to 10,000,000 feet per day on average East Texas flow schedule with provisions in design for doubling its capacity by addition of compressors. In the design of the plant, like in others built by Keith Jones, consideration was given to ruggedness, economy of construction, simplicity of operation, and efficiency of performance. Officers of the Gregg Tex Gasoline Corp. are: Clark Sample, president and treasurer; H. R. Dickerson, vice-president; J. S. Winningham, secretary.



Plant of Tall Pines Natural Gasoline Corp.



Parade Gasoline Co.'s plant

Hunt Company Plant

In September, consideration was given by H. L. Hunt, Inc., to the building of a natural gasoline plant to handle gas from that company's production in the area near Turnertown. The gathering area overlapped that of Excelsior Refining Co., whose plant was built in 1932 on the Ward Oil Co.-Giles lease in the M. J. Pru Survey of Rusk County. Parade Gasoline Co. was formed to incorporate the original interests of Excelsior Refining Co. and those of H. L. Hunt, Inc., in the plant operation. The capacity of the plant was increased from 6,000,000 to 12,000,000 feet per day and 28 miles of pipe of sizes from 4 to 16-inch was laid in the gathering system. Because of its satisfactory service in the original plant and gathering system of Excelsior Refining Co., it was decided to use Aircowelding in joining all of the pipe in the gathering system and additions to the plant. The new construction was under the personal general supervision of Carl E. Wharton, consulting engineer, of the Hanlon Buchanon Co., who developed a splendid organization of experienced men under H. J. DeLatin and Morris Rudy and including Howard Barry and Barney Dickson.

Forest Carpenter aircowelding 8-inch line for Lisbon Gasoline Co.'s plant at Carlisle, Texas

A part of the ditching and backfill was contracted by Guy Blount of Nacogdoches, Tex. Light weight Youngstown pipe in double random lengths, with edges bevelled for Aircowelding was furnished by Continental Supply Co. for the field lines. Engineering service on welding was furnished by Air Reduction Sales Co.

Three twin 165 horsepower compressors were added to the three 180 horsepower Clark compressors in the main engine room. The 6,000,000-foot capacity

(Continued on Page 33)

Crown Central Refinery Modernization Program Nearing Completion at Gulf Coast Plant

By NEIL WILLIAMS

HOUSTON, Texas, June 4.—A construction and expansion project which has included both the addition of considerable new equipment and facilities and the revamping of some of the old, is nearing completion at the Crown Central Petroleum Corp.'s refinery at Pasadena, east of Houston. Practically all this work has been started since the first of the year and amounts to more than has been done at the plant in all the several previous years put together.

Additions to the refinery comprise the installation of a gas recovery absorption and stabilization plant, a boiler feed water preheating system, increased storage facilities, a large new garage, together with other auxiliary equipment. Also, the company has worked over two batteries of Holmes-Manley stills, converting them from high to low level operation, rebuilt its acid recovery system, and revamped the rerun unit.

The principal new construction was the installation of the gas absorption and stabilization plant. This was put in by Alco Products, Inc., and consists of that company's conventional type equipment. Capacity of the plant is 6,000,000 feet of gas daily, recovering vapors off the cracking still, pressure distillate stabilizer and straightrun gasoline stabilizer.

The Crown refinery has not operated a recovery system although the pressure distillate and the straightrun gasoline stabilizers have reduced losses to a minimum, delivering a completely stabilized product to storage. Some years ago a compression system of gas recovery was in operation but this was discarded.

The boiler water preheater was designed at the plant and constructed out of an old 14 by 40-foot shell still. This was set up on end with a false, bowl-shaped bottom inserted about midway. At the top a steam-water contact was provided, in which exhaust steam from the boilers is injected against the incoming stream of cold boiler feed water. In this operation the water is preheated to a temperature around 200 degrees.

A triple purpose is served by the preheater. In addition to heating the boiler feed water, the exhaust steam coming into contact with the incoming cold water is condensed, conserving water, and at the same time the shell acts as a water reservoir with sufficient capacity for the operation of the boilers temporarily in the event of any trouble with the water supply. The upper half of the shell above the false bottom which serves as the reservoir, is adequately insulated to conserve heat. Although the water does not require treating it would be possible, if necessary, to inject chemicals in the top of the heater for that purpose. The bottom is concave in shape and a plug could easily be provided for drainage of sediment and impurities.

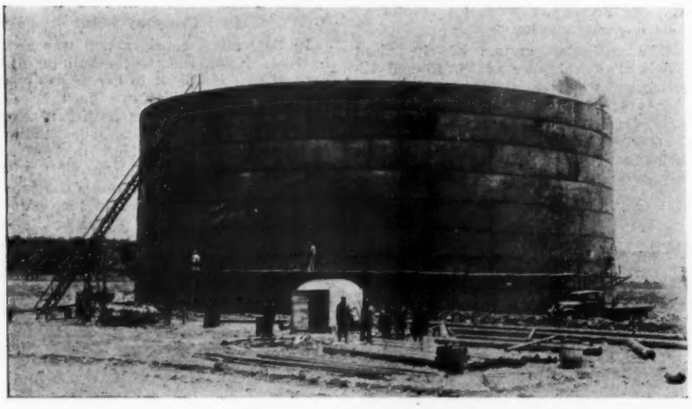
A new 91,500-bbl. steel tank is under construction to increase the storage facilities at the refinery. This is of all-welded construction and is being erected by Wyatt Metal & Boiler Works.

In the rebuilding of the acid recovery system, an entirely new concentrating tank has been constructed. Working over of the Holmes-Manley batteries has been completed, while revamping of the rerun unit still is nearly done. The new, fireproof garage was built to provide housing and upkeep facilities for the large number of company-owned cars and trucks.

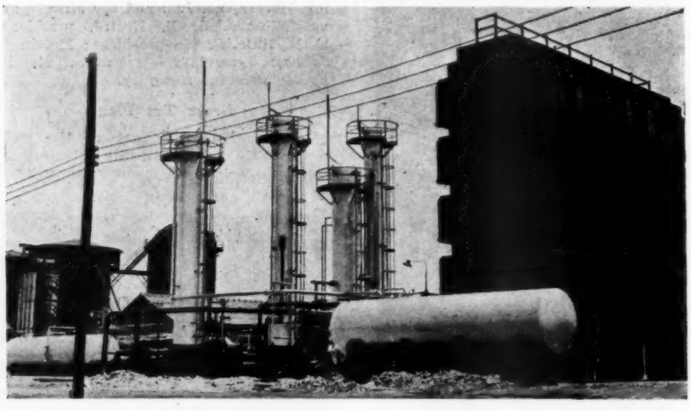
The additions and improvements at the Crown refinery are in line with the greatly increased business and activities which the company has enjoyed lately. Within the past year the company has entered directly the retail field and become an important factor in the marketing picture of Houston and this territory. It now has a total of 36 stations in Houston, nine of which are company owned. Most of the company-owned stations were built new.

Previously, the company had marketed its products only through exclusive jobbing companies locally, affiliated companies in the east, and wholesale to the general jobbing trade. It is one of the older independent refining companies of south Texas, although within recent years it has undergone a complete change in management. H. L. Lane is vice president in charge of operations of the company; K. W. Shimeall is refinery manager, and R. S. Meyers, superintendent. Other officers include H. A. Rosenberg, president, and S. K. Waters, comptroller and assistant treasurer.

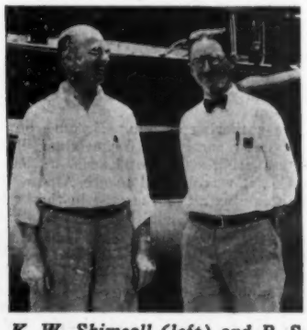
The plant has a capacity of between 16,000 and 20,000 bbls. daily, engaging in topping and cracking and manufacturing of lub stocks.



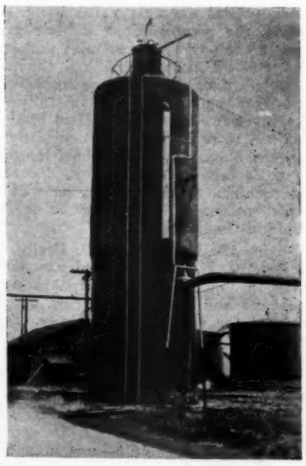
All welded steel 91,500-bbl. refinery storage tank being erected by Wyatt Boiler and Metal Works



New gas recovery absorption and stabilization plant



K. W. Shimeall (left) and R. S. Meyers, manager and superintendent, respectively, of Crown Central Petroleum Corp.'s refinery at Pasadena, near Houston, Texas



New exhaust steam-boiler feed water preheater constructed from an old 14-ft. by 40-ft. shell still

Portable Welding Unit Developed for Quick, Efficient Pipe Line Repair

By L. G. E. BIGNELL

Modern pipe line systems handle many thousand barrels of oil or gasoline per day under high pressures and upon carefully worked out schedules, so that delays are costly. Every care is exercised in selecting the equipment and in the construction of every part of the system, but at times leaks will occur in the pipe line. Quick repairs are necessary both to keep the loss of fluid to a minimum and to limit shutdown as much as possible. Many old lines are still to be replaced by modern equipment and in the meanwhile constant surveillance is necessary. Corrosion slowly eats through the walls of the pipe line, or leaks occur at the screwed joints. Drops in pressure indicate that something is wrong between stations and the search is immediately started to find and remedy the trouble.

To repair a leak in the old way meant that the line walker would discover the place where the break had occurred and then get word back to the emergency crew, who would drive out in a light wagon or truck. A hole would be dug to the line and beneath the pipe to permit a set of clamps to be put in place to seal the break with packing to close the hole. Later the pumps would be shut down and the repair made by removing the damaged joint and replacing with good pipe.

When the pumps were shut down the oil would drain to the low point in the line, and this frequently coincided with the place where the damage had occurred and much oil was lost. The job at best cost time and oil and was not in keeping with modern pipe line methods.

Instead of the old screwed lines, welding now plays an important part in all pipe line systems and both the acetylene and electric methods are extensively used. Electric equipment manufacturers have perfected generators for electric welding that are compact and can be driven by an internal combustion engine. They may be mounted upon skids that can be dragged by a truck or tractor to the place where the work is to be done or, better still, the unit may be mounted upon the truck or tractor and powered by its motor.

(Continued on Page 42)

LASTS *NINE* TIMES LONGER ON TOUGH PUMPING JOB

G.T.M. Specified Goodyear COMPASS Oil Well Belt Performs 724 days

Previous belts averaged 81 days' service

IT WAS one of those belt-eating pumping operations in the Tonkawa Field in Oklahoma.

Five silver duck belts of ordinary construction had given an average service of 81 days each when the G.T.M.—Goodyear Technical Man — was asked what he could do about it.

After carefully checking the set-up, he specified a Goodyear COMPASS Cord Oil Well Belt of double-deck construction because of its long life under excessive tension, its freedom from ply-separation troubles and its extremely low stretch.

G.T.M. GETS RESULTS

Seven hundred twenty-four days' service — *nine times the previous average*—demonstrated the soundness of his recommendation and the special fitness of Goodyear products designed for the oil industry.

Facts like these speak for themselves. Throughout the industry producers are saving money, time and trouble with *field-proved* Goodyear Belts and Hose, *accurately* and *practically* job-specified by the G. T. M. To obtain his services, write Goodyear, Akron, Ohio, or Los Angeles, California, or call your nearest Goodyear Mechanical Rubber Goods Distributor.

G. T. M. - SPECIFIED GOODYEAR PRODUCTS FOR THE OIL INDUSTRY

- COMPASS OIL Well Belts (Both Single and Double Construction)
- COMPASS Endless Belts
- THOR Transmission Belts (Seamless)
- Goodyear Conveyor Belts (For Handling Fuller's Earth)
- Hy-Pressure Rotary Hose
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  Service Station Pump Hose
  Service Station Air Hose
- Made by the Makers of Goodyear Tires

THE GREATEST NAME IN RUBBER

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BELTS · MOLDED GOODS · HOSE · PACKING

Employers Trustees in Charge of Human Welfare as Well as of Investments, Says C. H. Lieb

By C. H. LIEB
President Carter Oil Co.*

The present economic unrest of our nation is a matter of grave concern. The old system of social and industrial orders has been challenged. There has existed, and continues to exist, an economic unrest unparalleled in the experience of this generation. To every one of us here this unrest is a momentous and recurring thought of sober reflection.

What is economic unrest? It is a type of unrest that may be defined as loss of ability or opportunity by the masses to provide themselves and dependents with the necessities and comforts of life, without undue privation and hardship.

It is said that history is a great teacher. Then, let us glance hastily back

CLARENCE H. LIEB

to developments that so clearly indicate the constant and progressive changes; first, in the physical evolution of mankind.

In the early ages man's physical security was quite uncertain. The law of the jungle prevailed and operated with little more than natural interference. It was the survival of the fittest. Constant warfare among the tribes thinned the ranks of the sturdy. The diseased and incompetent depended on "broken spells" and the chant of medicine doctors to prolong life. The average span of life was comparable to that of our present day gangster.

At a much later date the life span was confronted with capital punishment for minor disdemeanors—and history shows it was freely meted out. A little over a hundred years ago men were dying by the thousands from "stomach cramps" or as they called it "bellyache." Of course we know now that it was appendicitis and there are, no doubt, many here today that have successfully weathered an appendectomy.

Even a century ago a man was old—or probably dead—at 40. Today one is 65 or better before he thinks of retirement from business. To prove the physical progress of man through the ages we need only suggest the marvelous advancements that have made possible the greater physical security and benefits. Since the industrial revolution of the eighteenth century there has been a marked increase in physical security, with a marked decrease in economic security.

*Before Oklahoma City Chamber of Commerce, June 1.

Economic Evolution

Until comparatively recent times, history reveals that the individual was, to a high degree, master of his own economic existence. In the earlier ages man depended upon the soil and was economically independent. For an abrupt contrast, compare that condition with a specialized mechanic living in an apartment house of a large industrial community. The latter has little control over the continuance of his source of food, clothing and shelter.

Legislative doctors are attempting to speed up the natural processes of economic evolution. In recent months we have witnessed an unsual amount of corrective experimentation.

Is it not appropriate to calmly examine the causes and possibly suggest for consideration some means of avoiding the experiments that may conceivably become so drastic as to threaten industry?

After all, it is the usual occurrence that anticipated results of experiments are not immediately realized. Rather than to admit failure, the universal practice is to doctor the experimental methods to such potency that the anticipated results are achieved. It is also equally true that there is reluctance to accept new experiments, or orders. In our present situation this reluctance is possibly retarding the achievement of results. This is dangerous, in the fact that we may have a stronger dose of stimulants than can be absorbed.

Economic security of individuals has become increasingly dependent upon an ever-decreasing number of those who control the tools of production. It would seem that our present difficulties are, in a large measure, due to the failure of those who control the tools of production, to fully recognize their responsibilities in providing economic security for the workers.

Responsibility of Employer

Employers have a trust in respect to their employes that has been heretofore largely ignored. At this point we might reflect upon a statement of Dr. Nicholas Murray Butler who said:

"It is only when men rise above domination by the profit motive and learn to subordinate profit to service that the social, economic and political orders begin to come in sight of a firm foundation and continuing existence."

In our future economic organization, the responsibility of the employer for the economic security of the worker must be carried beyond the point of providing employment when convenient and without any consideration of the employe's welfare.

If we are to retain any semblance of our prideful American individualism in our future economic system — the employer must recognize a broader responsibility to labor.

We believe it is highly unwise, and even dangerous, for employers to assume an attitude of permitting the Government to promote a program of economic improvements for the workmen. We will continue to have government interference in proportion to our failure to recognize the principle of employer responsibility. The individual is no longer master of his economic existence. Unless the principle of employer responsibility is recognized, drastic legislation—going far beyond anything we can contemplate—will undoubtedly force its acceptance.

This is not a one-sided problem. Both worker and employer are adversely affected by the present unrest. Both have equal interests at stake. Both groups should lend every effort toward a cooperative approach to a common problem.

Is the average man or woman with a job—possessing a feeling of reasonable security—apt to be a contributor to a condition which would ultimately mean the loss of that security which he desires continued? There is no problem regarding comprehensive understanding. The problem is of development and application of plans which will achieve the results desired in a broad, effective and permanent manner.

How can the employer exercise his trusteeship and, in some degree, avoid the potential dangers of drastic legislation?

Closer Partnership

The best single step that can be taken is for an employer to bring his employes into closer partnership on matters of mutual interest. Such a partnership cannot be achieved most effectively through third party interfergence.

There has been in successful operation in this country—for more than 16 years—a number of employe representation plans. These plans vary in detail—though the principles are essentially the same. Some have not been successful, but in each such instance the failure can be attributed to insincere or dishonest administration. The basic principle is the selection of representatives by the employes from their own numbers to sit in conference with management representatives for frank discussions of matters of mutual interest.

The first reaction of employers or foremen or supervisors to a proposal of an employe representation plan is usually unfavorable. It is feared that the principle will undermine the authority of the management—and the usual answer of a group of foremen as to whether or not they favor employe representation is that they do not need it. They feel that they are just and perfectly capable to dealing fairly with their employes. Experience with representation plans, however, is that many discriminations on the part of foremen and supervisors are brought to light and many practices have grown up that are obviously unjust and unfair to the employes that in no other manner can effectively reach the attention of the superior officers of an organization.

A representation plan does not turn over to the employes the responsibilities of management. The average employe does not want to run the business. He usually has a fairly clear idea of the responsibilities belonging to executives. He will respect any management which firmly maintains its place and refuses to delegate to workers problems and responsibilities which clearly belong to management. Foremen must be supported in the exercise of their legitimate functions. Any failure to preserve the line of demarcation between management problems and labor problems can only result in a collapse of the morale of supervisors and foremen.

Industrial Representation

For the employer accustomed to ruling arbitrarily, industrial representaiton will not succeed. Also, it will not succeed if it is adopted in the spirit of utilizing as a method through which to take advantage of his employes. An employe representation plan, to succeed, must have the support of both the employer and employe. The employer must reconcile himself to paying at least the prevailing wage for similar work in the locality and he must be willing to deal frankly and openly with the representatives of his employes on all questions of mutual interest. It has been demon-

(Continued on Page 77)

Administrator's Report on Crude Stocks

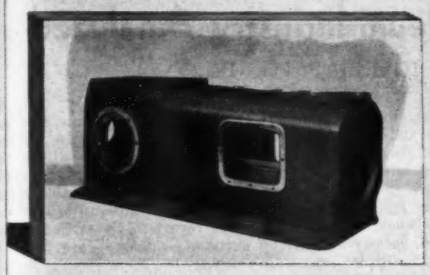
Stocks of domestic and foreign crude petroleum at the close of the week ended May 26 totaled 340,321,000 bbls., a decrease of 1,073,000 bbls. from the total of 341,394,000 bbls. on hand at the end of the preceding week, Harold L. Ickes, Secretary of the Interior and administrator of the code of fair competition for the petroleum industry, announced today. This decrease, which followed a decline of 325,000 bbls. during the previous week, comprised decreases of 1,040,000 bbls. in domestic crude stocks and 33,000 bbls. in foreign crude stocks.

Current reports of the industry indicate declines in crude oil production, runs to stills, and imports of crude. The approximate daily average balance of crude oil during the week ended May 26 was as follows (barrels): Production, 2,525,000; imports, 80,000; decrease in stocks, 153,000, equals runs to stills, 2,550,000; exports, fuel, losses, etc., 208,000.

CRUDE PETROLEUM STOCKS REPORTED BY COMPANIES HOLDING 100,000 BBLS. OR MORE

Grade of crude oil—	Stocks held by reporting companies: May 19, 1934 (bbls.)	May 26, 1934 (bbls.)	Change from May 19, 1934 (bbls.)
Pennsylvania Grade	4,746,000	4,758,000	+ 12,000
Other Appalachian, including Kentucky	1,322,000	1,303,000	— 19,000
Lima-Northeast Indiana-Michigan	1,611,000	1,605,000	— 6,000
Illinois-Southwest Indiana	11,279,000	11,279,000	.....
North Louisiana and Arkansas	10,971,000	10,861,000	—110,000
West Texas and Southeast New Mexico	29,175,000	28,918,000	—257,000
East Texas	42,273,000	41,931,000	—342,000
Other Mid-Continent	159,732,000	159,408,000	—324,000
Gulf Coast	15,345,000	15,609,000	+264,000
Rocky Mountain	27,731,000	27,685,000	— 46,000
California	33,717,000	33,505,000	—212,000
Total domestic crude	337,902,000	336,862,000	—1,040,000
Foreign crude	3,492,000	3,459,000	— 33,000
Total crude	341,394,000	340,321,000	—1,073,000

STRENGTH WITH REDUCED WEIGHT

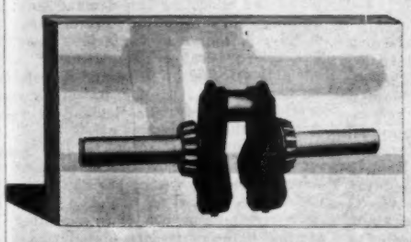


Timken Main Roller Bearings—oversize; designed for heavy railway service, permit stronger frame construction; minimize friction; rarely need adjustment; are safer if lubrication is interrupted.

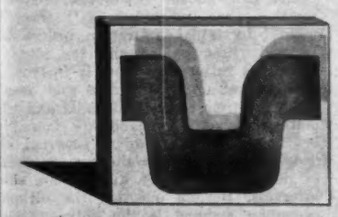
ONLY by the most effective use of high-strength materials, coupled with experienced designing, can Cooper-Bessemer build a pumping engine so husky and long-lived as the Type GAO — and at the same time avoid excessive weight.

If the design of this 40 H. P. two-cycle had a single weakness, four years on the load — under the most gruelling conditions — would have brought it out.

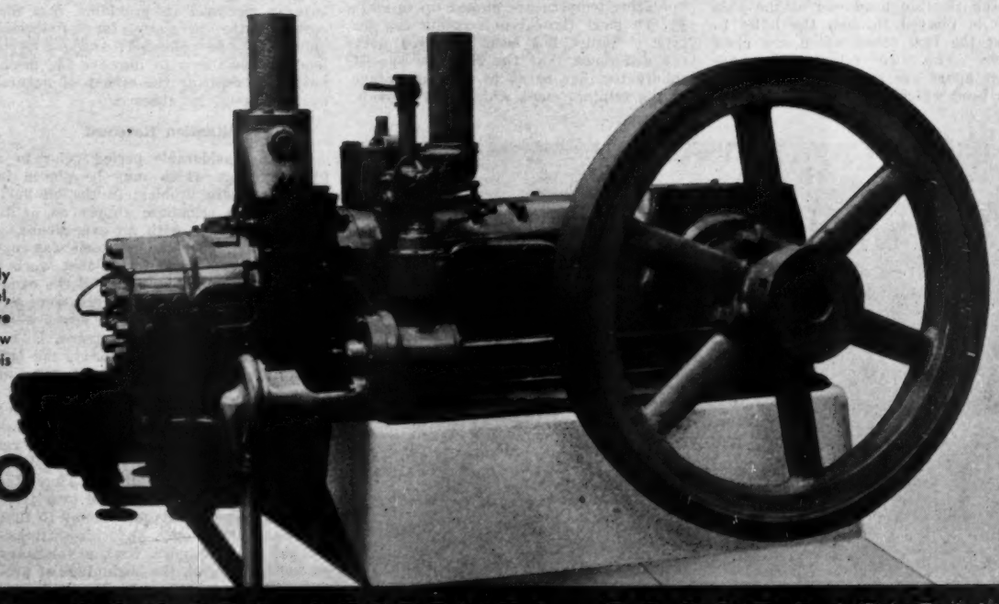
There are sound engineering reasons why Type GAO is a better pumping engine than all of the many thousands we have built since 1899. Ask our representative to explain the longer life, lower expense, and easier starting.



Die Forged Crankshaft — cross section shows how die forging preserves continuous flow lines of high-grade, heat-treated steel. Extra large in diameter. No Type GAO crankshaft has ever failed.



Box Type Main Frame—ruggedly and rigidly constructed of semi-steel, and properly proportioned to give the same strength above and below the line of piston thrust. This eliminates breakage.



TYPE-GAO

THE COOPER-BESSEMER CORPORATION

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High Pressure Sectional Exchanger Used in Revamping Pennzoil Dubbs Unit

By ROBERT C. CONINE

OIL CITY, Pa., June 6.—An installation which is attracting the attention of refiners of this region is a new type of transfer line heat exchanger which operates just beyond the oil quench line at the output side of the cracking furnace and shows, after 30-day runs, a bare film of coke of no consequence in operation. Another interesting feature is the compact construction and design which permits the addition of new sections as occasion arises.

The installation discussed here is located in the Pennzoil Co. refinery at Oil City, Pa., and is made up of units known as "Tubeflo sections," manufactured by the Griscom-Russell Co. Twelve sections are arranged in three parallel stacks 4 high. The third stack was added recently when the processing unit with which the transfer line heat exchanger operates, was changed over from reforming work to cracking.

Under the present arrangement the charge leaves the cracking furnace at a temperature of 950° F., and pressure of 600 pounds, and is quenched by an oil stream of 400° F. to 450° F. temperature so that it reaches the Tubeflo sections at a temperature of 850° F. The charge in the Tubeflo sections is made up as follows: 40 g.p.m. of 28° A.P.I. gravity quenching oil; about 54 g.p.m. of 45° A.P.I. gravity fresh stock, and about 175 g.p.m. of 30° A.P.I. gravity recycle oil; 41.8 gallons of 64° A.P.I. gravity gasoline, and 4.5 gallons of 10° A.P.I. gravity residue. Although the pass through the Tubeflo sections is rapid, the temperature drop is from 850° F. to 700° F.

Construction features of the Tubeflo sections may be described as follows: Four seamless steel tubes, arranged on a triangular spacing, 20 feet long are passed through diamond shape steel fins. The assembly is accomplished by setting the fins on edge in a special grooved table, passing the tubes through the fins and then expanding the four tubes simultaneously into the fins throughout the entire length of the tubes. The tubes are expanded into the floating billets with multigrove tube joint.

At the floating head end of the unit a hole is pierced through the billet to connect the two tubes which are close together. The two tubes which are farthest apart are connected by a steel return bend which is bolted to the floating head. At the front end of the unit all four tubes are closed by tapered steel plugs having a total included angle of 19°. The conical seats are machined in the billets with a total included angle of 20°. These plugs are held in place by jack screws passed through a backing up plate bolted to the stationary head. This design eliminates all intermediate joints in the main body sections, and produces a type of closure for the ends of the tubes with which a perfectly tight joint can be made up without requiring any gaskets.

In this design both stationary and floating heads are made of steel forgings, the stationary head having rectangular cross section to facilitate stacking. Fluids are carried from one stationary head to the next by connectors which are made up of cast chrome molybdenum and are finished with a conical end to fit into the cone seat provided in the heads. The top and bottom sections of any stack are provided with adapters, having standard 2-inch drilling for connecting to the inlet and outlet pipes. The low pressure design is satisfactory for operations up to 800° F. and 400 pounds pressure.

The medium pressure design is of similar construction, the principal difference being in the use of tubes of smaller diameter. Such a section is designed for operating pressure of 1,200 pounds and maximum temperature of 800° F., using ordinary carbon steel tubes. For temperatures above this or for high temperature differences, chrome molybdenum tubing is used. This material has a higher creep stress at elevated temperatures and also is highly resistant to the type of corrosion sometimes encountered in refinery operation. Such sections are now serving as transfer line exchangers under maximum temperatures up to 940° on hot side with feed side under 1,200 pounds operating pressure.

In addition to the above units, the Griscom-Russell Co. has developed a high pressure unit with particular reference to the hydrogenation process. This process requires an exchanger handling a mixture of hydrogen and oil at an actual operating pressure of 3,750 pounds, and operating temperature almost up to 900° F. To meet these requirements the fin type structure has been employed with the difference that the fins are spaced solidly together so as to take advantage of the reinforcement which they provide for the longitudinal stress set up in the tubes.

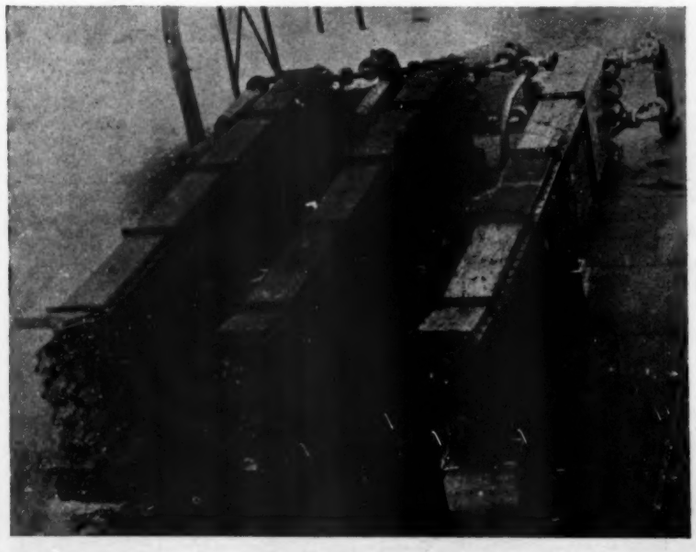
There are three main classes of duty for which the Tubeflo sections are particularly recommended:

1. For heat exchangers involving cracking coil tar or heavy residuum from shell stills. These fluids usually carry considerable coke which rapidly fouls up ordinary heat exchangers, but which is said to pass through these sections due to the high velocity maintained in the large tubes.

2. Heating, cooling, or heat exchange, involving clay bearing lubricating oils.

3. High temperature or high pressure fluids, even though clean, can be handled more economically in a structure in which there are no large diameter vessels placed under pressure.

The use of these sections, in which both oil streams pass through tubes, with no possibility of a leak from one stream to the other, rather than through shell and tube, is gaining recognition in the Pennsylvania grade region which is now modernizing many of its refineries.



Sectional exchangers installed in Pennzoil plant at Oil City as part of Dubbs cracking unit

Elements in Balancing Supply and Demand in the Petroleum Industry Analyzed

By JOSEPH E. POGUE
Consulting Engineer, New York*

One of the most essential elements in the orderly functioning of any industry is equilibrium, a condition of balance among all the factors entering into its operation and into its relations to the general economy. A condition of equilibrium, however, is an ideal, always to be aimed at, never to be attained, because change is a law of nature and change brings the continuing necessity for adjustment. Accordingly the quality of flexibility is indispensable, and when we aim at equilibrium we must avoid the induction of rigidities if success is desired. The problem of balancing supply and demand in the petroleum industry is part, but only part, of the larger problem of maintaining the tendency toward equilibrium which nature unaided will always seek to bring about.

That a need for artificially balancing supply and demand is recognized as existing in the petroleum industry is evidence that fundamental disequilibrium is present. What are the causes of the condition of unbalance? In the foreground, overdevelopment; in the background, overcapitalization; still further beneath the surface, the legal rule of capture which destroys equilibrium wherever it gets a chance. The first two of these causes are really not serious, except in a short-time sense; but the third has driven the industry to change its structure and has given rise to the endless complications of proration and operation under a quota system. So long as the law of capture governs this industry and nature is generous in providing new discoveries, the necessity for production quotas may be conceded; and the problem becomes: how to improve the mechanism for creating the effects of natural equilibrium in its absence.

Situation Reversed

For a considerable period prior to a turning point which may be placed in 1922, the main problem in the oil business was to stimulate supply so as to keep it in phase with an ever-mounting consumption. Then the emphasis was concentrated upon those forces that worked mainly upon the supply side of the equation; and destraining influences were left to one side. In the past 12 years, however, circumstances have changed. Under the stimulus of new technology, the law of capture, and a certain prodigality of nature, all impelled forward by the inflow of capital, supply has grown faster than the absorptive powers of consumption, banking up the surplus in the form of inventories, unneeded plant capacities, and underground potentials. Thus the petroleum industry has moved over from the setting of a shortage economy to that of a surplus economy, and this shift has brought into existence, first, a voluntary production control, the beginnings of proration; second, a loosely-organized system of states control; and, finally, a centralized production-quota system, which is the heart of the petroleum code. These successive structures have the aspect of an evolution under the impetus of the pressure of a surplus. In institutionalizing the new forms, it will be the part of wisdom to establish safeguards against the creation of irrevocable rigidities that will lead to disequilibria if the setting should revert to its earlier status and the surplus economy prove to be a passing phase.

Source of Confusion

For the present, however, the industry is seeking to operate under a quota system, which, in essence, is a planned supply in terms of what is calculated to be the requirements of the market. The technique of predetermining the needed supply involves forecasting the total demand and allocating this demand on some reasonable basis to the several areas of supply. A source of confusion, however, has arisen because (a) "demand" is a variable affected by price and speculative influences, and (b) the prevailing conception of supply and demand is volumetric rather than dynamic.

Under proration prior to the petroleum code, crude oil production quotas were determined on the basis of refiners' demand as arrived at in public hearings. As a result allowables were permitted to expand to accommodate speculation and never reduced until after overproduction had developed and become unmistakable. This method of operation, therefore, demonstrated itself to be faulty in practice, as failing to create even volumetric balance. The petroleum code introduced a marked advance in method when it substituted the more precise concept of "consumer demand for petroleum products" for the vague and undefined "market demand" by which proration orders had formerly been guided and the ideas of producers influenced. Now it is true, of course, that on the average and over a period of time refiners' demand and ultimate consumers' demand are bound to be identical, but owing to seasonal and speculative influences the two measures of demand frequently diverge for short intervals. Beyond question the ultimate consumer demand is the only practical basis for setting production quotas, and if it is recognized that "reasonable market demand for crude oil" and "consumer demand for petroleum products" are necessarily synonymous, any apparent differences in the code regulations and state statutes become easily reconciled.

Problem of Equilibrium

A second source of confusion in planning equilibrium between supply and demand is the prevailing tendency to look upon both supply and demand as quantities to be weighed the one against the other. As a matter of fact, supply and demand are forces, the products of mass and pressure. Supply and demand may be balanced volumetrically as measured by statistics, and yet if the pressure of a given supply be greater than the counter pressure of an equal volume of demand, there is still disequilirium. Volumetric balance is easier to attain artificially than equipoise between the forces of supply and demand; for excess capaci-

(Continued on Page 33)

*Before Stabilization Committee of the Petroleum Division, A.I.M.E., New York.
Author's title: "Balancing Supply and Demand in the Petroleum Industry."

The most and the pleasantest miles for his dollar — that is what the motorist wants when he buys gasoline

And it pays a refiner to give it to him

Dubbscracking is the way to make the kind of gasoline that pleases the engine—and the motorist

Dubbscracked gasoline doesn't knock

Besides, it gives more miles to the gallon and faster pickup

You can always sell Dubbscracked gasoline—and get the price for it

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

Late Fields

KANSAS

Lario Oil & Gas Co.'s No. 1, C SE NE SW Section 7-20-9w, Rice County, Kansas, which had Siliceous lime at 3,285 feet and made a potential flow of 748 bbls. in 24 hours, was drilled deeper to 3,294 bbls. and the production which had dropped to 300 bbls. increased to 400 bbls. a day.

Empire Oil & Refining Co.'s No. 2, C NE SE SE Section 7-22-3w, Harvey County, was acidized in Hunton lime at 3,382-3,430 feet and produced 96 bbls. in one day. It was re-acidized and pumped 259 bbls. in one day and 175 bbls. the second day.

The Texas Co.'s No. 4, C SW NW SW Section 8-22-3w, drilled to Wilcox sand at 3,590-96 feet and got water. It was plugged back to Hunton lime topped at 3,432 feet, but experienced pipe trouble.

Continental Oil Co., Gypsy Oil Co. and others' No. 1, C NE NE NW Section 32-21-1w, McPherson County, which has Hunton lime at 3,274-92½ feet, was opened up and flowed one head of 72 bbls. in one hour. The following day it flowed 51 bbls. in one hour and then quit. The swab was run later in the day and it varied in production from 12 to 65 bbls. per hour.

CALIFORNIA

BAKERSFIELD, Calif., June 4.—Minor mechanical trouble prevented production test on General Petroleum's No. 1 Berry, in South Belridge Field at 11,377 feet. When ready to run swab the 20-inch surface casing settled and dropped 6 inches. This broke the christmas tree. The well looks exceedingly promising.

Socony-Vacuum Oil Corp. Stock Is Reduced to $15

NEW YORK, June 4.—At a meeting of stockholders of the Socony Vacuum Oil Corp. the number of directors was reduced from 14 to 11.

The par value of the stock was changed from $25 to $15 which results in a reduction of the outstanding capital stock from $792,562,350 to $475,537,410 and thus creates a capital surplus of $327,024,740 against which a write-off of $228,123,580 covering goodwill and other assets will be charged immediately. The balance of $100,000,000 will be added to the capital surplus.

J. A. Brown, chairman of the management committee, explained that the change was made to enable the company to write off certain intangible assets and values of tangible assets in one operation instead of over several years. This will facilitate the distribution of future earnings to stockholders.

In answer to a question, Herbert L. Pratt, chairman of the board, stated the total pay of directors in 1933 was $670,500 with no bonuses. These salaries he explained were less than 1 per cent of the total payroll and averaged only 2.1 per share on the common stock outstanding.

At a meeting of the directors the following management committee elected last fall was re-elected: J. A. Brown, chairman; Arthur F. Corwin, in charge of production; H. F. Sheets, in charge of foreign operations; F. A. Fales, in charge of sales, and G. V. Holton, general counsel.

MAGNETIC STORM

The Tucson observatory of the U. S. Coast and Geodetic Survey reports a moderate magnetic storm began at 2 p.m. (C.S.T.), June 4 and is still in progress at time of going to press. The telegram reads:

"Storm began fourth. Twenty. Moderate."

NOVA SCOTIA GASOLINE

HALIFAX, Nova Scotia, June 2.—A reduction of 1½ cents per gallon in the price of gasoline in Novia Scotia, may eliminate needless duplication of service stations.

Sinclair Companies and Labor Union Sign Agreement; Employers Increase Wages

Articles of agreement between the Sinclair Refining Co., Sinclair Prairie Oil Co., Sinclair Prairie Oil Marketing Co., Sinclair Prairie Pipe Line Co. and Rio Grande Oil Co., on the one hand, and the International Association of Oil Field, Gas Well and Refinery Workers of America, on the other, were signed on May 31.

The agreement covers classification of workmen, wages, working hours, promotions and dismissals, filling of vacancies, overtime, physical examinations of applicants, adjustment of grievances and other matters. It covers a period of one year "and thereafter unless terminated by either party on 30 days' written notice by the party electing to terminate. Within said period of 30 days the parties hereto shall confer for the purpose of mutually considering upon what terms and conditions this agreement may be extended instead of terminated."

Article 3 says: "It is agreed there shall be no cessation of work through strikes or lockouts during the term of this agreement."

President Fremming's Statement

An interesting statement was made to the Associated Press in Fort Worth last Friday by Harvey C. Fremming of Long Beach, Calif., president of the International Association of Oil Field, Gas Well and Refinery Workers of America, in regard to the recent labor differences in Seminole. Mr. Fremming said:

"The grossly exaggerated reports from Seminole were very unfortunate both for our union and for Sinclair company. They were embarrassing to both. It makes things very awkward for us at a time when we are honestly trying to ameliorate critical conditions. It is not fair to the company."

Mr. Fremming said 10 men with temporary casing pulling jobs with the company at Seminole, and whose work would be finished on Saturday, June 2, would be laid off.

Increases in Wages

H. F. Sinclair, charman of the board of directors of the Consolidated Oil Corp., announced an adjustment of wages for field and plant employes of the Sinclair Prairie Oil Co. and a vacation schedule for workers.

The wage adjustment amounts to increases of from 4 cents to 13 cents per hour. It was made effective June 1.

Following are representative examples of rates established in the new schedules—complete schedules will be issued within a few days:

	Hourly
Roustabouts	$ .74
Pumpers—straight time	$130 per mo.
Pumpers—code	.86
Laborers	.53@.57
Carpenters	.85
Engineers—plant operators	.87
Firemen	.74
Line walkers	.74
Lease truck drivers	.74
Fleet truck drivers:	
First and second year	.80
Third and fourth year	.85
Fifth year	.90
Welders	.96
Cleanout driller (deep)	1.06
Cleanout helpers	.80
Machinists—first class	1.04
Machinists—second class	.98
Machinist's helper	.75
Machine shop floorman, first	.85
Machine shop floorman, second	.80
Electrician	.93
Boilermakers	.96

Pipe Line Men Benefit

John R. Manion, president of the Sinclair Prairie Pipe Line Co., Sinclair Prairie Pipe Line Co. of Texas and Consolidated Pipe Line Co., announced that as of June 1, the new wage scale for pipe line workers would be as follows, with the complete schedule issued in a few days:

Occupation—	Rate per hr.
Tour engineers	$1.00
Oilers	.88
Firemen	.88
Operator-gauger	.88
Engineer operator	1.00
Buda engineers	.82
Line walkers	.88
Truck drivers	.88
Welders	.90
Welder helpers	.75
Common pickup labor	.53

J. E. Moorhead to Go With Rio Grande Oil Co.

Announcement was made by H. E. Britzman, director of sales, Rio Grande Oil Co., of the appointment of J. E. Moorhead as advertising and sales promotion manager effective July 1. Mr. Moorhead will take up his new duties at

J. E. MOORHEAD

that time at the company headquarters in Los Angeles, Calif. His wide experience in advertising and merchandising has been gained over a period of 15 years since leaving an active newspaper career in the intermountain west. In 1923 he was placed in charge of advertising for the Mountain States Telephone & Telegraph Co. at Denver, resigning in 1928 to become advertising manager of the Marland Refining Co. at Ponca City, Okla. This company was later merged with the Continental Oil Co. and Mr. Moorhead took on the duties of sales promotion and sales training for the combined organization, in addition to the supervision of a large advertising appropriation.

To accept his new assignment, Mr. Moorhead is resigning his present position as publicity director of the Pennsylvania Grade Crude Oil Association at Oil City, Pa., which conducts a national campaign of advertising and merchandising in the interest of the producers, refiners and marketers of the so-called Pennsylvania region.

ADVICE ON SOVIET TRADE

The petroleum situation in the U.S.S.R. is discussed in considerable detail in a new book entitled "Industrialized Russia," by Alcan Hirsch, Chemical Catalog Co., New York, 1934. Price $3. Other chapters deal with the industrial developments in Russia since the advent of the Soviet, summarizing the present status of petroleum and other major industries.

The Oil Man's Calendar

June

7-8—Roanoke, Va., Virginia Oil Jobbers Association, Virginia Oil Men's Association, and Virginia Petroleum Industries Committee, Roanoke Hotel.

7-8—Warren, Pa., Fire and Safety Marshals of the National Petroleum Association, annual meeting.

12-13—Charleston, W. Va., West Virginia Oil Marketers Association, Daniel Boone Hotel.

12-14—Fort Smith, Ark., U. S. Good Roads Association.

14-15—Grand Forks, N. Dak., Northwest Petroleum Association, North Dakota Division, Dacotah Hotel.

14-15—State College, Pa., Pennsylvania Grade Crude Oil Association.

17-22—Saranac, N. Y., Society of Automotive Engineers, Saranac Inn.

20-23—State College, Pa., A.S.M.E. National Oil and Gas Power meeting.

25-29—Denver, Colo., American Society of Mechanical Engineers, Cosmopolitan Hotel.

25-29—Atlantic City, N. J., American Society for Testing Materials, annual meeting.

28-29—Charleston, W. Va., West Virginia Oil Marketers Association.

July

9-10—Rapid City, S. Dak., South Dakota Independent Oil Men's Association.

August

24-27—Titusville, Pa., Drake Well Memorial Celebration.

September

Atlantic City, N. J., North American Gasoline Tax Conference.

9—Wernersville, Pa., American Trade Association executives.

10-14—Cleveland, Ohio, American Chemical Society.

11-12—Louisville, Ky., Kentucky Petroleum Marketers Association, Brown Hotel (dates tentative).

19-21—Atlantic City, N. J., National Petroleum Association.

26-27—Columbus, Ohio, Ohio Petroleum Marketers Association, Deshler-Wallick Hotel.

October

1-5—Cleveland, Ohio, National Safety Council, Cleveland, Statler, Carter and Hollenden Hotels.

9—Michigan Independent Petroleum Distributors Association, place to be named later.

12-13—American Institute of Mining Engineers, Petroleum Division, fall meeting, Tulsa, Mayo Hotel.

16-18—Big Four State Jobbers Association Convention, Kansas City, Mo.

29—American Gas Association Convention and Exhibition, Atlantic City, N. J.

November

5-9—Cleveland, Ohio, Automotive Service Industries Show, Cleveland Public Auditorium.

Los Angeles, Calif., American Association of Petroleum Geologists, Pacific section.

12-15—Dallas, Tex., annual meeting, A.P.I.

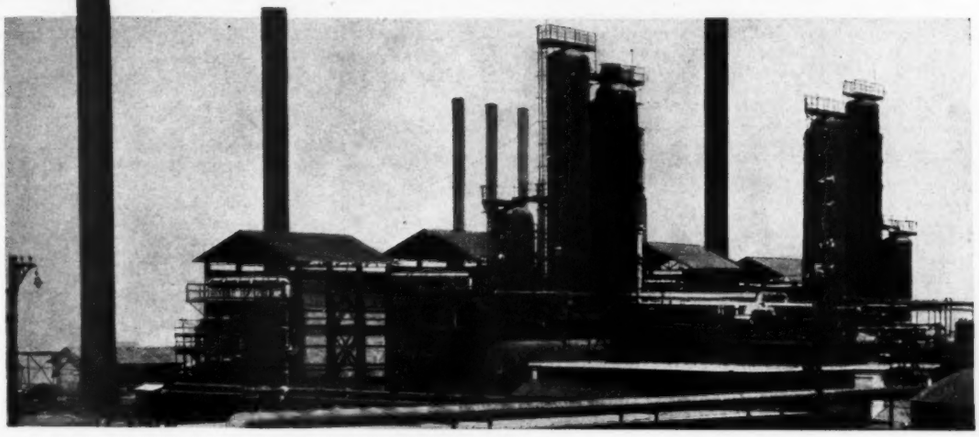
December

3-8—New York, National Exposition of Power and Mechanical Engineering, Grand Central Palace.

January

7—New York, Society of Automotive Engineers, annual dinner.

in the DUTCH WEST INDIES



CRACKING A VENEZUELA CRUDE

A refinery in the Dutch West Indies having a combination cracking installation with a crude throughput capacity of over 100,000 barrels per day is operating under the broad licensing rights of Gasoline Products Company.

This refinery is one of many in various parts of the world operating cracking units designed under the broad licensing rights of Gasoline Products Company. Such units, employ any or all of the outstanding features of the Cross, de Florez, Holmes-Manley and Tube and Tank processes, assuring the refiner a cracking unit of sufficient flexibility to fulfill his particular requirements.

We suggest you investigate the broad and comprehensive service of this organization before investing in cracking equipment.

LICENSES granted under United States and Foreign Patents for: Cross • de Florez • Holmes-Manley • Tube and Tank Cracking Processes and Combination Cracking Units.

Licensing Agents:
The M. W. KELLOGG CO.
225 Broadway · New York
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European Representative:
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GASOLINE PRODUCTS COMPANY
INCORPORATED
11 COMMERCE STREET · NEWARK, NEW JERSEY

NEWS FROM FOREIGN LANDS

U. S. S. R.

While crude oil production, drilling and refinery output have shown increases over 1933 so far this year reports from Russia are to the effect that those in charge of the Government's oil administration expect to expand all phases of operations over the remainder of the year. Government officials are not satisfied with the increases which are below those decided upon at the start of the year as part of the second five-year plan.

Drilling operations so far this year, based on completed wells, have run far below expectations. This is particularly true in regard to wells drilled in new areas where the U.S.S.R. outlined an ambitious program for 1934 and succeeding years. Test wells have been drilled in several new areas and geological surveys have indicated the presence of oil and gas in other sections. It is the plan of the Soviet to definitely establish the producing possibilities of these properties and carry on development as rapidly as possible. Some of these discoveries are located in remote parts of Russia and will require pipe lines and new refineries if oil is found in commercial quantities.

In the older fields the program of rehabilitating old wells has not been carried out as hoped for at the start of the year. In this work those in charge of producing operations have been able to greatly increase production in wells which in some cases had been practically abandoned. Certain fields have not maintained their quotas under the plan due to the fact that old wells have not been worked over and placed on a profitable basis. This work is to be pushed over the last half of the year.

In the refinery end, the plants have been able to take care of all the crude that has been made available by the producing branch. However the Government has work under way which involves the rebuilding of old crude distillation and cracking equipment coupled with the installation of new units. The lubricating oil production of the U.S.S.R. refineries has been increased this year.

FRANCE

The 13 operating refineries in France are now refining in excess of 75,000 bbls. of crude oil daily, according to reports covering May operations. For the first three months of this year official government data show that crude runs to stills averaged slightly under 75,000 bbls. and since that time operations have been expanded.

Present runs to stills represent more than a 100 per cent increase over operations at this time last year. The government report shows that crude runs to stills at French refineries the first quarter of 1933 averaged 35,000 bbls. daily. Later in 1933 operations were expanded rapidly, due to the completion of refineries and for entire refiners averaged better than 50,000 bbls. of crude oil daily. Since the first of this year one new plant started operating and plants already in operation increased their crude throughput. The growth in petroleum refining capacity in France over the past three years is indicated in the fact that crude runs to stills in 1931 averaged 10,000 bbls. daily and in 1932, 17,000 bbls. daily.

Since 1930, with the encouragement of the French government, which allows crude oil for local refining to be brought into the country duty free with high import duties on finished products, several new refineries have been built. Most of these plants have been built by outside capital, although French interests now have a substantial investment in refining facilities, the outstanding example of which is the Compagnie Francaise des Petroles, partially owned by the French government, which now has two refineries operating in France. Subsidiaries of the Anglo-Persian Oil Co., Ltd., and the Royal Dutch-Shell have new refineries in operation. Among the American companies, the Standard Oil Co. of New Jersey, Atlantic Refining Co., Gulf Refining Co., Socony-Vacuum Co. and the Texas Co. are all interested in new refinery projects in France. All of these companies, through subsidiary interests, have been distributors in France for several years.

Imports of Refinery Products

The large increase in crude oil imports which have been necessary to provide crude oil for the new refineries has resulted in a substantial decrease in receipts of finished petroleum products from outside refineries. France for several years was one of the largest buyers of gasoline and other products from refinery operators in Russia, Rumania, United States, West Indies and other countries. The refinery construction program was sponsored by the government with the view of making France largely independent of outside sources of supply, and this objective is being rapidly obtained. It is estimated that crude runs to stills averaging 100,000 bbls. daily would practically supply all the products required for domestic consumption in France. The present refineries, including one under construction, have a capacity slightly in excess of 100,000 bbls. daily.

The following table gives the imports of refinery products for the first quarters of 1934 and 1933 (data in 42-gallon barrels):

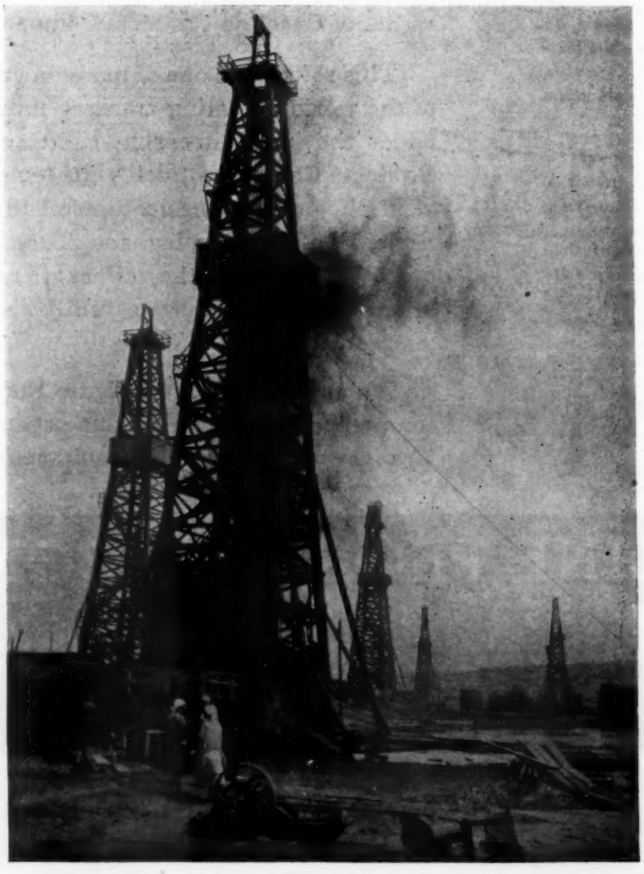
	1934	1933
Gasoline	2,177,000	3,010,000
Kerosene	99,400	241,000
Lubricating oils	280,000	322,000
Gas oil	714,000	756,000
Fuel oil	546,000	975,000
Road oil	50,000	70,000

It will be noted in the table while the imports of most products showed a substantial decline the first quarter of this year, the decrease was small in the case of gas oil, reflecting the heavy demand for gas oil charging stock for the new cracking units of the French refineries.

CHILE

A more liberal policy in regard to foreign operations is expected to be adopted in Chile in the near future through legislative action. Under the new plan foreigners holding concessions will be permitted to develop their properties and Chileans holding concessions will be allowed to secure foreign capital for development purposes.

The granting of concessions is to be controlled by the president. One plan suggested would be to grant concessions for a period of 30 years, after which the property, including all machinery, would pass to the government. The government is to receive a certain percentage of each concession. Those holding the concessions would be required to pay the government a 10 per cent royalty.



—Photo by I. C. Uren.

A gusher in the Puta field, Baku region, U. S. S. R. Note women oil field workers

VENEZUELA

Crude oil production in Venezuela for the first quarter of 1934 showed a substantial increase over the same period in 1933 in most fields. Drilling operations have increased this year in the older areas and considerable wildcatting and extension drilling is under way. The largest percentage increase of any field is that of Quirequire in eastern Venezuela. This field was discovered by the Standard Oil Co. of Venezuela, a subsidiary of the Creole Petroleum Corp. (Standard Oil Co. of New Jersey). The present production of the field is in excess of 30,000 bbls. daily, an increase of approximately 100 per cent when compared with production in May last year.

Daily crude oil production of other fields based on production for the first quarters of 1934 and 1933 is as follows (data in barrels daily):

	1934	1933
Lagunillas	177,000	153,600
La Rosa Ambrosio	63,300	68,000
Mene Grande	40,400	31,400
Tarra	17,800	21,100
Cumerebo	12,200	14,000
Concepcion	5,500	5,600
Other fields	3,900	6,500

The Lago Petroleum Corp. is the largest producer with a production of approximately 107,000 bbls. daily so far this year, followed by V.O.C. with a production of 90,000 bbls. daily and Creole Petroleum Corp., whose production has jumped to 52,000 bbls. daily. The subsidiaries of the Gulf Oil Corp. also have increased their production in Venezuela so that it now averages 42,000 bbls. daily.

GREAT BRITAIN

Imports of crude oil and all the principal refinery products increased in Great Britain the first four months of this year compared with the same period in 1933. The April imports showed an increase over April, 1933, thus continuing a trend which has been apparent all this year, indicating a substantial increase in the consumption of petroleum products in Great Britain this year.

The following table gives the imports for the first four months of 1934 and 1933 (data in Imperial gallons):

	1934	1933
Crude oil	158,467,000	125,770,000
Gasoline	349,726,000	347,831,000
Kerosene	84,930,000	71,899,000
Lubricating oil	34,559,000	29,164,000
Gas oil	47,010,000	39,086,000
Fuel oil	189,448,000	179,106,000
Other oils	8,671,000	4,497,000
Total	872,811,000	797,353,000

The principal suppliers of gasoline for the first four months of 1934 and 1933 are as follows (data in Imperial gallons):

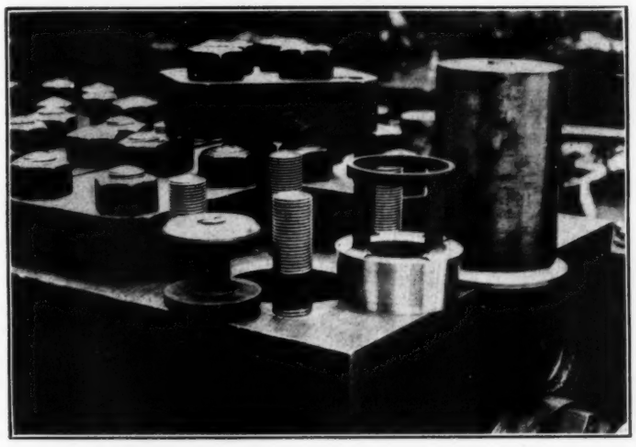
	1934	1933
Russia	18,276,000	24,194,000
Dutch East Indies	19,996,000	12,826,000
D. W. Indies	152,489,000	123,457,000
Rumania	17,101,000	40,803,000
Persia	50,493,000	63,099,000
United States	42,026,000	50,536,000
Mexico	19,932,000	9,969,000
Other countries	29,413,000	22,948,000

This table shows that while the Dutch East Indies, the Dutch West Indies and Mexico have shown large increases as suppliers of gasoline for consumption in Great Britain, Russia, Rumania, Persia and United States have decreased in importance.

TRANSIT

hot oil pumps have ground joints

Ground joints are tight joints



TRANSIT Hot Oil Pump forged steel fluid body, showing reversible valve, valve cage, suction valve opening filler, forged steel valve cover, and ground joint.

Ground joints are tight joints—they are easy to "break" and easy to "make." They do away with the blowing out of gaskets—a dangerous occurrence when handling hot oil—and they do away with the continual renewing of gaskets.

That is why ground joints are used altogether on TRANSIT Hot Oil Pump valve openings.

Valve covers are not gasketed. Each valve cover simply holds the ground flange of a "filler" tight to its ground seat in the block.

The studs are extra heavy, and are of special high tensile strength steel.

NATIONAL TRANSIT PUMP AND MACHINE CO.

OIL CITY, PENNSYLVANIA

NEW YORK - PHILADELPHIA - CHICAGO - CLEVELAND - PITTSBURGH
LOS ANGELES - HOUSTON - TULSA

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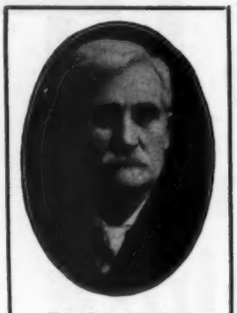

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No Permanent Control

The industry is thoroughly convinced that, under existing conditions, production cannot be brought within demand without some sort of Federal control. But there is no such agreement that control should be permanent.

The National Recovery Act and its codes were framed, and accepted, as emergency remedies, temporary aids until the country got back on its feet. The expectation was that, as conditions improved, industry and business would develop capacity for self-government under rules of fair competition.

The emphasized reluctance of the administration to assume more authority than was actually necessary was cited as sufficient answer to accusations of any socialistic or communistic trend in the New Deal.

Industry and business, assured of fair competition, were to be free to work out their own salvation. That was the picture, and, so far as the American people understand it, it still is. There has been nothing to indicate that the country is ready to consent to any nationalization of its industry and commerce.

This, we believe, applies in the oil industry as well as anywhere else. It is true the oil industry is having difficulty in obtaining the desired results under its code. But what industry or business has obtained expected results? The cotton code authority is having its troubles. Conditions in the steel and automotive industries are still critical.

No Federal cotton act is proposed to provide permanent government control of the cotton industry because so far it has not solved its production problem. The coal industry is not yet happy but it is not proposed to enact a Federal coal act to turn it over to the government as a permanent remedy. The railroads have had a Federal control law for years and look at them!

All the other codes are being regarded as merely emergency measures, limited to June next year. Oil, alone, is singled out for permanent restriction.

Secretary Ickes' position is understandable. He has had a year's experience trying to solve the oil problem and he may be justified in thinking it an interminable job. But the best argument against a permanent Federal oil administration is himself. There is no assurance that he will be permanent. A successor without his sympathetic understanding of the industry and his ability to shoot straight might prove to advocates of permanent control that they had jumped out of the frying pan into the fire.

The proposal that a permanent petroleum administration should be put in charge of two or three members of the cabinet and others perhaps subject to confirmation by the Senate is just as alarming.

We have had several demonstrations of what follows when politics is injected into the oil business. It is one of the reasons why we are where we are today.

The hope has been that under the leadership of President Roosevelt and Secretary Ickes a bill for temporary Federal control could be passed that would permit the oil administrator to hold production within demand until the industry can stabilize itself.

There never was another East Texas and all the probabilities are there never will be another. These new discoveries reported from time to time fail to come up to the advance hopes.

Experts on reserves failed to predict East Texas. They may as easily be mistaken the other way. But when the day does come when production threatens to decline below demand the oil industry will hate to be hamstrung in its efforts to find new production by some bureaucracy at Washington.

That there is no time limit on state regulatory laws is not a precedent for riveting Federal control on the entire industry for all time. State regulation is limited to specific phases and does not assume control of the business.

Those who now mistakenly advocate permanent Federal control, thinking it will be limited to quotas in commerce, are likely to wake up some day in the future and find Federal authority in complete control of every detail of the business from the lease to the gasoline pump, prices and all.

Congress should not adjourn before passing a bill providing for the limited Federal control now needed by Administrator Ickes to cope with the existing situation but there should be a definite period in time to that control instead of the mere suspension provisions which perpetuate it indefinitely far beyond the present emergency.

The oil industry, like all others, should have the hope of some day regaining full self-government. Otherwise we may find it established as a precedent for a corporative state or some other form of totalitarian government so popular in Europe just now but so unpalatable to American taste.

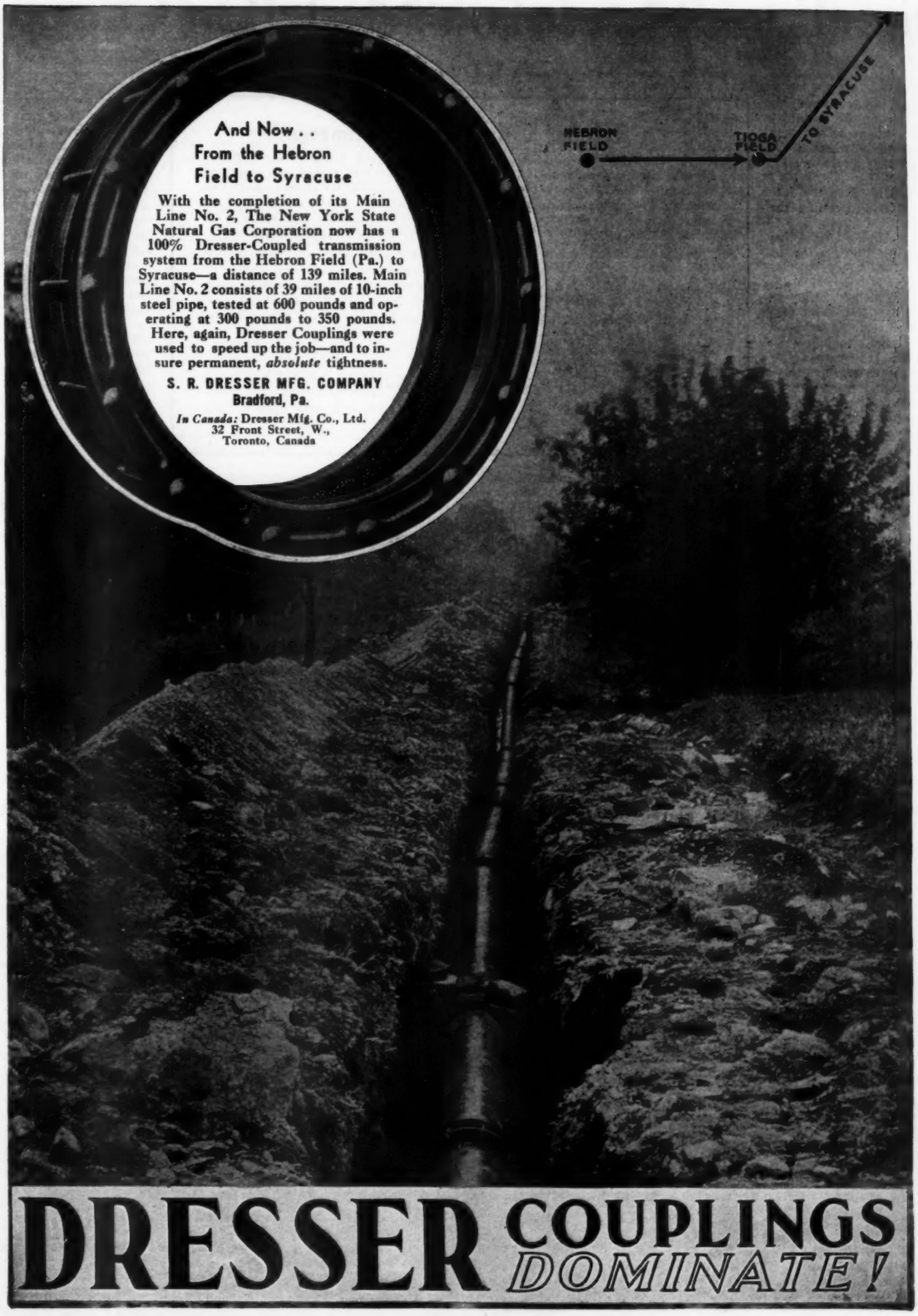
A National Disaster

The stripper well is getting recognition. Secretary Ickes told the House committee we will be threatened with the loss of valuable reserves in stripper well areas without effective regulation, that of the 320,000 wells producing less than 8 barrels 250,000 have an average daily production of less than 2 barrels; many of which will produce for years if not forced to abandonment by the competition of cheap oil from flush fields. They give employment to 60,000 workers and represent the investment of small independent operators. "The unemployment, destruction of property values and loss of oil reserves that would result from their abandonment," Mr. Ickes said, "would be a national disaster."

Judge Amos L. Beaty, chairman of the Planning and Coordination Committee, told the committee the loss of stripper wells is not a theory. He said: "According to The Oil and Gas Journal, a reliable authority, the number of wells abandoned in 1929 was 7,482. In 1930, as the flood of cheap oil increased, the number was 15,676 and in 1931 it was 21,603. All oil left in the ground surrounding these wells is there to the end of time; no one is foolish enough to incur in later years the expense of drilling and equipping wells to obtain only one or two barrels a day."

Congress can protect the little fellow and the public interest at the same time by passing a control bill that will save the stripper wells from being drowned in a flood of cheap overproduction.

NRA MEMBER U.S. WE DO OUR PART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Answers to Two Questions Likely to Determine Direction of Gasoline Market in Group 3

By T. F. SMILEY

Two questions faced the gasoline trade in the Oklahoma (Group 3) territory this week, and the answers to them seemed likely to determine whether the market would go to higher levels or slide to demoralizing lows.

One question: What is to be the fate of the oil control bill now awaiting the action of Congress?

The other: Will the buying of gasoline from small refiners by the majors be continued?

Softness of refinery gasoline which appeared this week was ascribed largely to a growing fear that the oil control bill, to which a large element in the industry has been looking for relief, would not be passed at the present session of Congress. Hopes had been entertained that this piece of legislation, sponsored by the petroleum administration in Washington and designed to give regulatory measures in the oil business the backing of Federal authority, would be enacted into law, affording both producers and refiners the stabilized market which should attend its operation.

Uncertain What Majors Will Do

Adding a further depressing influence was uncertainty regarding continued buying from small refiners by majors and semimajors. It is recognized that such refiner buying as has been done in recent weeks was an important factor in sustaining the market. Not all the major companies which had been expected to participate in the buying program have done so, however, with the result that the whole movement is reported to be in danger of failure.

Twenty-nine large companies figured in the original plan, which as presented by the Planning and Coordination Committee, looked to the purchase by these companies of 3 per cent of their gasoline needs from less well established refineries. Some of the companies which the P. and C. committee expected to cooperate are reported to have done no buying whatever. This failure to take part in the movement went far to neutralize the results of buying by those who did participate. Some companies which signified their willingness to join in the program if all named in the plan did so, withdrew from the enterprise when it was seen that there was no unanimity of action. Whether the companies which have been doing substantial buying will continue to do so in the light of developments is regarded as problematical.

Jobber Buying Lags

Jobber buying, which showed signs of revival last week, suffered a relapse and sank into a condition approaching coma. Throughout the jobber group there was evident again the same indisposition to add to stocks that has been observable for months. Jobbers are said to be convinced that adjournment of Congress without passing the oil control bill will be the signal for an orgy of hot-oil operations in East Texas. This inevitably would demoralize the gasoline market and jobbers who had filled their storage at present price levels would "take a licking."

Low-octane U. S. Motor gasoline was bought in East Texas late last week at 3⅞ Group 3 for resale. Twenty cars offered at that price Monday of this week stirred little interest. Whether they eventually found a taker was not reported.

Natural gasoline, which had been moping for weeks, gave no evidence of emerging from its low state of mind. Observers say nevertheless that while the natural might easily respond to good news by recording higher prices, there is little probability of a serious nosedive. Passage of the oil control bill, for instance, might have favorable reaction in natural gasoline quotations, but failure to pass it is not likely to send prices any lower.

As a matter of fact, there is definite potential demand for 18-pound material, but buyer and seller cannot agree on price. Owners of the 18-55 grade refuse to let it go at the current quotations, which are based on the price for 26-70. Buyers would like to take some of it, but refuse to pay more than the posted prices.

Jobber buying in the last week was inconsequential. Last week's prices throughout the list were virtually unchanged.

Kerosene was weak, with prices inclined to sag.

Gas Oil Experiences Break

Gas oil, for which there has been a strong demand as cracking stock, experienced a sharp break. The 32-36, which two months ago made a sudden jump from 1⅞ cents to 2⅛ and then to 2⅜, lost an eighth-cent this week, with predictions that it would roll back to the old quotations. There had been an insistent market in East Texas for cracking stock on the part of East Coast refiners. It is said that in their eagerness to obtain this material they bid the price up to a point at which, with the added transportation charges, it no longer was profitable to buy.

The market for lubricants, strong for weeks, continued steady, with prices unchanged. Wax showed seasonal slowness.

Refined Oil Market Barometer

Uncertainties overhanging the market created softness in refinery gasoline in most areas and no real improvement was looked for until the oil control bill should be disposed of and it should be known definitely whether buying by major refiners was to continue. Jobbers evinced little interest in either refinery gasoline or natural. Seasonal influences were observable in other parts of the list, but price changes were unusually few.

Mid-Continent.—Both refinery and natural gasolines unsteady. Kerosene easy. Gas oils off.

East Coast.—Sentiment mixed. Export gasoline market slow, with prices below domestic. Fuels facing active competition with natural gas.

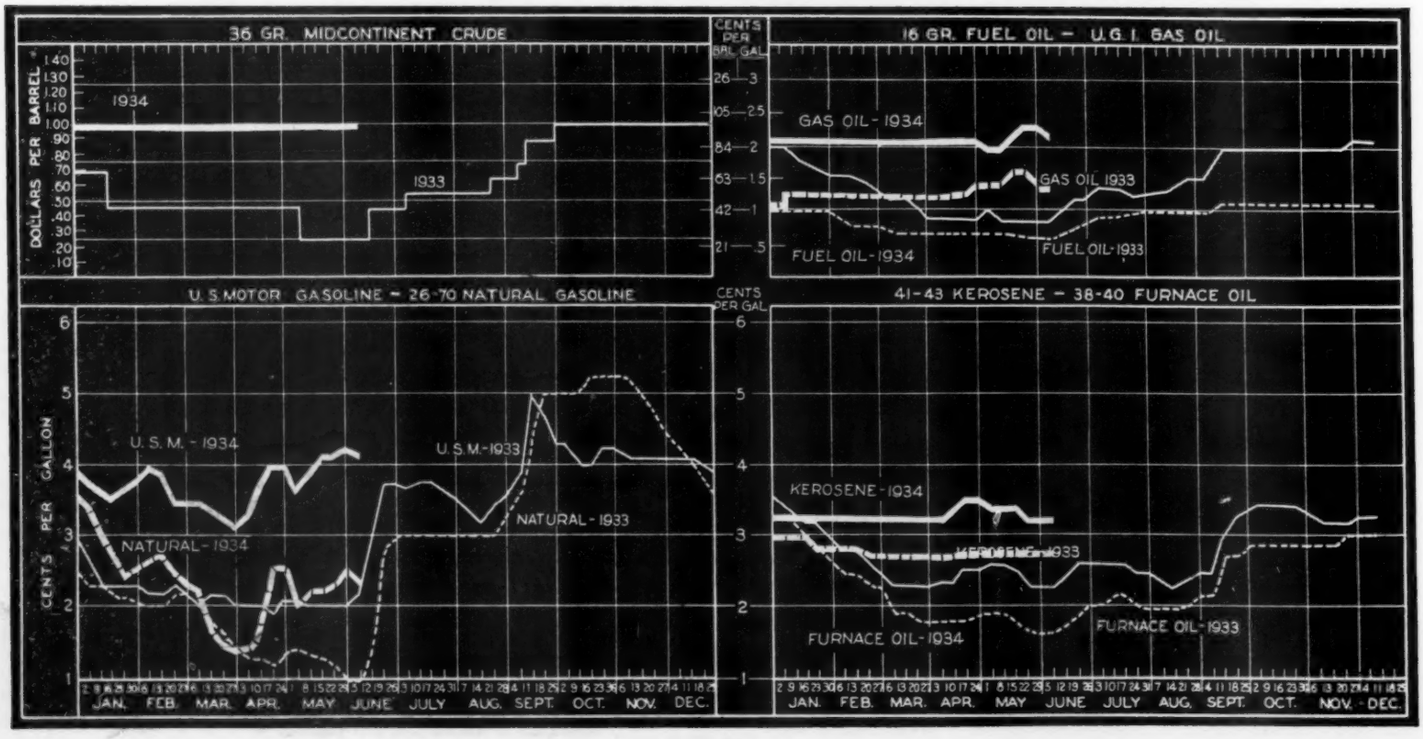
Gulf Coast.—Gasoline off, though stocks are not large. Scarcely any movement in other products.

Pennsylvania.—Kerosene, fuel oil, neutrals and bright stocks firm. Gasoline steady.

California.—All products steady, with no price changes anywhere in the list.

Chicago.—Gasoline quiet, fairly steady. Kerosene spotty. Heavy fuels tight. Naphthas firm.

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)



Conditions in Eastern Markets Somewhat Mixed; Hope to Maintain Prices for Ninety Days

By C. O. WILLSON

New York Bureau, The Oil and Gas Journal

NEW YORK, June 4.—Conditions in eastern refinery markets were somewhat mixed as a new week and month of trading started today. The advance of one-half cent in gasoline tank wagon and service station prices, effective throughout the Standard of New Jersey territory on May 28, was a favorable development from the standpoint of the sellers. At the time the advance was announced it was explained that the tank car prices would remain unchanged so far as the New Jersey Standard was concerned. However, many are predicting a general advance in tank car prices of one-fourth or one-half cent along the entire Atlantic Seaboard before the end of the week.

As the situation now stands, the tank wagon and service station prices on gasoline have been advanced a total of 1½ cents at most points throughout the Standard of New Jersey territory over the past 30 days. This in effect offsets the 1½-cent decline made effective in early February. In the Standard of New York territory which includes New York State and New England, price advances in tank wagon and retail markets have totaled from 1 to 1½ cents at normal points, so this territory also has returned to the price levels in effect early this year and the latter part of 1933. The advance in tank car prices including small barge quotations have averaged one-half cent in the unbranded grades and in the branded products the increases in many cases have been the same as the advances in the tank wagon and service station quotations.

Thus the eastern refinery market, so far as gasoline prices are concerned, has obtained the objective outlined late in April, of regaining the ground lost since last fall. The original plan also called for advances from this point to more profitable levels to offset the increased incidental to the application of the NRA labor program. Whether this can be accomplished over the next 30 days remains to be seen.

Views on Outlook

As regards the future the trade as usual has its pessimists and optimists. The former in this territory point to the continued inactivity in the export market where the quotations, largely nominal, have not advanced and are now below the prevailing domestic prices. They also claim that the gasoline supplies continue too large and will not permit the heavy withdrawals from winter storage which normally start this month. They fear dumping from the Gulf Coast on this market through independent sources. Those inclined to stress the more favorable developments which they expect to materialize, believe that the Washington administration with or without the aid of the Ickes control bill now pending in Congress will have a much tighter hold on crude oil production and refinery operations within the next 30 days than they have had any time this year. They also believe that inter-refinery buying, including purchases by large eastern refiners, will eliminate the weak spots in coastal markets and place eastern prices on a firmer basis than any time since the code for the industry became effective. They also point to the continued indications of an increase of around 10 per cent for gasoline this summer compared to 1933. These observers will be disappointed if additional advances of from 1 to 2 cents per gallon do not materialize in East Coast gasoline prices before July 4. Between these extremes there are those who take a middle-of-the-road position and will be satisfied if the industry can hold the prices already in effect over the next 90 days.

Trouble With Fuels

The recent efforts to place the market for all classes of fuels on a more favorable basis are running into some snags. As explained in these columns (May 24 issue) contract price schedules were announced to apply in tank car and tank wagon sales over the coming season. These contracts in general provided for a base price to apply immediately with a top price of not less than 25 per cent above the base price in the case of Nos. 1, 2, 3 and 4 oils and 20 per cent in the case of the Nos. 5 and 6 oils.

For example, in the case of the No. 1 furnace oil and range oil, the base price was 8½ cents with a top of 10¾ cents and in the case of Nos. 2, 3 and 4 oils the base was 7 cents with a top of 8½ cents. These prices apply to tank wagon deliveries in metropolitan New York for the year starting June 1. The tank car prices to jobbers average about 2 cents under these quotations. Jobbers and the final consumers have been slow in accepting these new schedules. This attitude on the part of the buyers is due to the fact that the base prices are from 1 to 2 cents higher than last year with the possibility that the prices to these buyers under the top provision clause might advance an additional 1½ to 2 cents per gallon during the life of the contract. Consumers who bought their oils over last season at a flat price of 5 or 6 cents a gallon with discounts off these prices in certain cases, naturally are slow in accepting the new schedules. In the case of the small householder the difference in fuel costs between the coming year and last year will be from $25 to $50 and in the case of some of the large hospitals, apartments and similar buildings the additional costs will mean additional outlays for fuel amounting to several thousands dollars.

One large distributor of all grades of fuels explains that the consumers have been "spoiled" by the low prices which prevailed in 1933 and 1932 a development of cut-throat competition among sellers reflecting a demoralized condition in the oil business. He says the prices asked by refiners and distributors are below the so-called "normal" years of a few years ago and are still low enough to keep oil in a strongly competitive pisition with coal, natural gas and other fuels among a large majority of consumers. He and many other distributors are hopeful that the refiners will maintain the schedules announced and they predict that if this is done the prices will be gradually accepted before the main consuming season starts next fall.

On the other hand in the dull season in winch fuel stocks, particularly the overhead grades, are accumulated, there is always the danger that some refiners and distributors in their anxiety to close contracts will give concessions and there are indications this is being done in the present situation. This could develop in a complete breakdown of the plan to place fuels on a price basis in line with manufacturing and distributing costs.

Natural Gas Competition

A thorn in the side of distributors at this time at several points is the competition of the gas companies. They have offered various propositions in order to enlarge the sale of gas. One of the common practices is the offer to install a gas burner at a small charge or on a rental basis to be added to the monthly gas bill. Oil companies are not permitted under their code to meet this competition with a similar sales plan. The higher prices asked for oil naturally make this competitive situation more acute at this time. However, those who have made a study of this situation state that the gas, which is either a natural product or a blend of natural and artificial gases, is not priced low enough to be competitive with oil even with the free or low priced

(Continued on Page 33)

American Petroleum Institute Weekly Refinery Statistics

Figures below reported for week by American Petroleum Institute. (1) Per cent refinery capacity represented. (2) Daily average crude runs to stills. (3) Finished motor fuel stocks at refineries, bulk terminals, in transit and pipe lines. (4) Gas oil and fuel oil stocks. All figures in 42-gallon barrels.

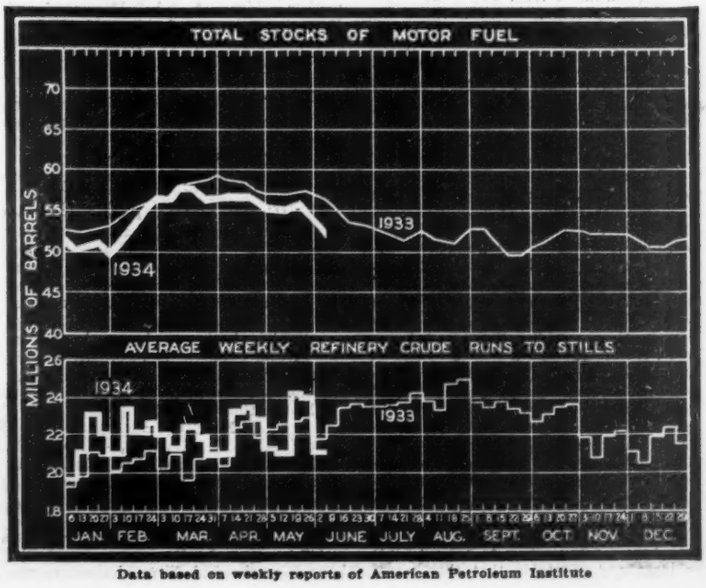
Note—Gasoline stocks 1933 and 1934 not directly comparable for in 1933 large volumes of unfinished and "other motor fuel" were included.

Week Ending June 2, 1934, Compared to Week Ago

	Week ending June 2, 1934				Week Ending May 26, 1934			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	464,000	16,590,000	7,465,000	100.0	503,000	16,979,000	7,392,000
Appalachian	93.3	98,000	1,611,000	851,000	93.3	106,000	1,788,000	808,000
Ind., Ill., Ky.	94.6	316,000	8,658,000	2,929,000	94.6	331,000	8,804,000	2,786,000
Okla., Kans., Mo.	83.7	218,000	5,584,000	3,147,000	83.7	258,000	5,552,000	3,098,000
Inland Texas	47.6	85,000	1,284,000	1,789,000	47.6	93,000	1,366,000	1,803,000
Texas Gulf	97.5	394,000	4,258,000	5,543,000	97.5	465,000	4,858,000	5,293,000
La. Gulf	96.4	86,000	1,282,000	1,091,000	96.4	101,000	1,212,000	1,097,000
N. La. and Ark.	83.7	50,000	280,000	434,000	83.7	57,000	262,000	459,000
Rocky Mtn.	66.7	28,000	1,156,000	679,000	66.7	32,000	1,203,000	667,000
California	96.9	388,000	12,529,000	80,296,000	96.9	454,000	12,469,000	80,607,000
Total U. S.	89.7	2,127,000	53,232,000	104,224,000	89.7	2,405,000	54,493,000	104,010,000

Week Ending June 2, 1934, Compared to Year Ago

	Week ending June 2, 1934				Week ending June 3, 1933			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	464,000	16,590,000	7,465,000	99.1	446,000	16,922,000	6,897,000
Appalachian	93.3	98,000	1,611,000	851,000	95.0	81,000	2,088,000	820,000
Ind., Ill., Ky.	94.6	316,000	8,658,000	2,929,000	97.5	310,000	8,239,000	3,987,000
Okla., Kans., Mo.	83.7	218,000	5,584,000	3,147,000	84.9	223,000	4,948,000	3,265,000
Inland Texas	47.6	85,000	1,284,000	1,789,000	56.4	73,000	1,595,000	2,243,000
Texas Gulf	97.5	394,000	4,258,000	5,543,000	97.7	432,000	5,553,000	6,125,000
La. Gulf	96.4	86,000	1,282,000	1,091,000	97.3	109,000	1,387,000	2,044,000
N. La. and Ark.	83.7	50,000	280,000	434,000	88.5	33,000	292,000	564,000
Rocky Mtn.	66.7	28,000	1,156,000	679,000	90.8	36,000	1,244,000	686,000
California	96.9	388,000	12,529,000	80,296,000	94.6	433,000	14,119,000	98,415,000
Total U. S.	89.7	2,127,000	53,232,000	104,224,000	91.6	2,187,000	56,387,000	125,046,000



Data based on weekly reports of American Petroleum Institute

Tulsa Oil Man Writes Book on Urschel Case

E. E. Kirkpatrick, who was vice president of Tom Slick, Inc., and head of the land department and manager of the Tulsa offices of the Slick and Urschel

E. E. KIRKPATRICK

interests, has written an exceptionally interesting book entitled "Crime's Paradise," which deals with the kidnaping of Charles Urschel, Oklahoma City oil man. Mr. Kirkpatrick was active in the case from the time Mr. Urschel was kidnaped from his home until the bandits perpetrating the crime and their associates were safely behind the bars in prison. He was the man who met the bandits and paid them the ransom of $200,000 in $20 bills.

In the introduction to the book, Walter Ferguson, Tulsa banker, states: "Mr. Kirkpatrick has, I think, recounted a drama that will live because it contains all the elements of an important folk tale, a tale that is filled with romance, struggle, glamour, horror and high courage, set against a back-drop rich with the vivid colors of the old west." The book pays high tribute to Gus Jones, special agent of the division of investigation of the U. S. Department of Justice and to this entire division and ranks it high with Scotland Yard and the Northwest Mounted Police. It is published by the Naylor Co., San Antonio, Tex., and sells for $2.

Oil Industry Accomplished Much Under the Code

(Continued from Page 12)

fit reaped by this industry advances all other phases of our American industrial life. The farmer is helped. The industrial East feels the spur of new life through the renewed consuming and purchasing power of the oil states. Public revenues show increased receipts from the multitude of taxes paid by this most heavily taxed of all industries. The railroads, carrying equipment and carrying also the goods purchased by the residents of the oil states are among the beneficiaries of our advance. It would be hard to find a worth-while phase of our financial, commercial or industrial life which is not aided by the recovery of the petroleum industry, even though that recovery is yet far from complete. We are helping to make the dreams of President Franklin D. Roosevelt come true. We are doing our part for the New Deal. We are helping make employment more general and good pay more common throughout the nation. We are building a better America. While our achievements are not complete and though our work has been subjected to some criticism, we will take the blame for whatever errors we may have committed, but beyond all those minor errors which are inevitable, we can point with honest gratification to achievements so large and so stable that they would have seemed mad dreams even to the most optimistic among us a year ago.

On the whole, the oil fraternity is optimistic for the future. No one can doubt that real progress has been made. All, except a few, are deeply grateful to President Roosevelt and Administrator Ickes for their patient, understanding of the manifold problems involved and for their very genuine co-operation with the Planning and Coordination Committee.

It is my opinion that the alleged diversity of interests among the oil producing states, as regards the allocation to each state of its proportion of the national demand coupled with some few adverse court decisions which have been handed down over the past several months, make it necessary to strengthen the arm of the oil administrator so that he may have, and where necessary use, the power effectively to control the condition of overproduction that has wrecked our industry in the past. The Thomas-Disney oil bill now before Congress is expected to accomplish this end and if enacted into law will largely remove the difficulties now partially obstructing complete recovery. If limited in scope to a comparatively short period of time, say two years, I believe this bill will do much towards the permanent stabilization of the oil business.

Partners Die Same Week; B. O. Hammond; F. Gibson

SHREVEPORT, La., June 2.—B. O. Hammond, 35, one of the partners of the firm of Hammond-Gibson Tank Co., Longview, Tex., died of angina pectoris here this morning. Mr. Hammond complained of feeling ill about two weeks ago and went to Mineral Wells, Tex., for treatment.

While there he received word that his partner, Fred W. Gibson, Longview, Tex., had been taken to a hospital here, and Mr. Hammond drove from Mineral Wells to see him, arriving on the afternoon of May 25. That evening he complained of feeling ill and went onto the street for fresh air. He was found unconscious two hours later in a drugstore and rushed to the hospital where Mr. Gibson was a patient.

Fred W. Gibson died on May 29 without Mr. Hammond seeing him, as Mr. Hammond was unconscious until his death on Saturday morning. Mr. Gibson was born in Belfast, Ireland, in 1899, and his body was buried in Shreveport, La.

Mr. Hammond was a native of Louisiana and worked for the Parkersburg Rig & Reel Co. at various branches in the Mid-Continent and Rocky Mountain districts from 1919 until he and Mr. Gibson formed their company about three years ago, when East Texas oil field became active.

Mr. Hammond is survived by his mother, Mrs. A. A. Hammond of Destrahan, La., and his widow, Mrs. Veeta Hammond, of Longview, Tex. Three sisters and three brothers also survive. The body was buried at Forest Park Cemetery, Shreveport, La., on June 3.

Chemical Water Treatment Is Suitable for Refineries

(Continued from Page 11)

soluble and the carbon dioxide passes out as a gas.

E. Barium carbonate—Barium carbonate may be considered for use where there is an excessive amount of sodium sulphate formed in the water treating process. The barium carbonate is soluble, the barium sulphate is insoluble, whereas the original sodium sulphate is very soluble.

The reaction is:

$$Na_2SO_4 + BaCO_3 = BaSO_4 + Na_2CO_3$$

The sodium carbonate is soluble, but would be considered unobjectionable where the sulphate would be considered as in excessive amount.

F. Coagulant: Alum or Iron — Any water treating or softening process should have a mechanical filter element to remove the precipitated materials, suspended matter and color originally in the water, and a settling basin where the coagulation and adsorption may take place. Alum, or aluminum sulphate, iron sulphate and a number of aluminates, such as sodium aluminate, are used for this purpose of forming the coagulant or floc.

The floc is an insoluble spongy mass, and may be made in batch, or continuously during the water treating or softening process by the addition of the materials with the lime, or soda ash or other softening agents.

Alum; $Al_2(SO_4)_3$ and hydrated lime; $Ca(OH)_2$ form a gelationous mass in water;

$Al_2(SO_4)_3 + 3\,Ca(OH)_2 = 2\,Al(OH)_3 + 3\,CaSO_4$ the coagulant or floc is aluminium tri-hydroxide, $Al(OH)_3$.

Iron sulphate: $FeSO_4$ and hydrated lime give a similar reaction:

$FeSO_4 + Ca(OH)_2 = Fe(OH)_2 + CaSO_4$ the cogulant, ferrous hydroxide is slightly soluble but with a slight amount of oxygen present in the water, it is converted to the ferric hydroxide, as follows:

$$Fe(OH)_2 + \tfrac{1}{2}H_2O + \tfrac{1}{4}O_2 = Fe(OH)_3$$

Solubility

To state that some salts are soluble and that others are insoluble is essentially correct for practical purposes, though all materials may be more or less soluble, in different temperatures of water. Table 2 gives relative and approximate solubilities in cold water. And this will illustrate why it would be difficult to obtain zero hardness in any treated water.

TABLE 2—SOLUBILITY IN WATER AT 0° C.

	Parts by wt. Salt	Parts by wt. Water
Calcium chloride, CaCl	6	10
Calcium carbonate, $CaCO_3$	1	100,000
Calcium sulphate, $CaSO_4$	18	10,000
Magnesium carbonate, $MgCO_3$	1	10,000
Barium carbonate, $BaCO_3$	22	1,000,000
Barium sulphate, $BaSO_4$	2	1,000,000
Sodium carbonate, $NaCO_3$	7	100
Sodium sulphate, $NaSO_4$	20	100

Example

An example is taken to give an outline of the simple procedure required to determine the materials required for water treating, the products of the treating, and the calculations involved by the reactions. For simplification, it is assumed that the filter mass is made, and the quality of raw water to be treated is 100,000 U. S. gallons. Chemical reactions are given together with so much of the calculations as will indicate the method of obtaining weights of materials from the formulas.

The raw water; Sample C, Table 1:

	Ttl. lbs.	Mol wt.
Calcium bicarbonate	143	162.0
Magnesium bicarbonate	113	146.5
Calcium sulphate	49	136.0

The total pounds of calcium bicarbonate are calculated as follows; as are the other principal materials of the water analysis:

$$\frac{100{,}000 \text{ gallons} \times 10 \text{ grains per gallon}}{7{,}000 \text{ grains per pound}} = 143 \text{ pounds.}$$

The reactions:

1. $CaSO_4 + Na_2CO_3 = CaCO_3 + Na_2SO_4$.
2. $Na_2SO_4 + BaCO_3 = Na_2CO_3 + BaSO_4$.
3. $Ca(HCO_3)_2 \longrightarrow CaCO_3 + CO_2 + H_2O$.
4. $Mg(HCO_3)_2 \longrightarrow MgCO_3 + CO_2 + H_2O$.

The calculations (in part):

In a reaction, as 1, if the weight is known for one material, this weight divided by its molecular weight gives a value (mol pound or mol gram, depending on the weight unit used) that may be used as a multiplier factor to obtain the weight of all other materials in the equation; the total weight on each side of the equation should balance. The weight, in this case is known for the calcium sulphate; $CaSO_4$ = 49 pounds.

$$\frac{49}{136.0} = 0.335 \text{ mol lb. of } CaSO_4, \text{ thus}$$

requiring an amount of soda ash, Na_2CO_3, mol weight 106;

$106 \times 0.335 = 35.5$ lbs. Na_2CO_3 forming sodium sulphate, Na_2SO_4, mol weight 142.

$142 \times 0.335 = 47.5$ lbs. Na_2SO_4.

In Reaction 2, having the same mol pound of sodium sulphate, there is required an amount of barium carbonate, $BaCO_3$, mol weight 197.5;

$197.5 \times 0.335 = 66.5$ lbs. $BaCO_3$ that gives a precipitate of barium sulphate, $BaSO_4$, mol weight 233.4;

$233.4 \times 0.335 = 78.2$ lbs. $BaSO_4$

The precipitates of calcium and magnesium carbonates may be similarly found, and adding the precipitates obtained by Reactions 1 and 2, and 3 and 4, the total deposits of insoluble salts may be found, with minute correctness for the slight solubilities as in Table 2.

Flow Diagram

A theoretical flow diagram of a water treating or softening plant illustrates the flow of water through the solution tanks, where it is treated as in Reactions 1 and 2; then to the sediment tank, where heated by steam, Reactions 3 and 4 are started. The latter reactions are completed in an open heater, where any dissolved gases, including the released carbon dioxide are removed by aeration.

The precipitates carried over, the coagulant or floc and other matter passes to the settling tank. There should be a continuous re-circulation in the solution and sediment tanks and the flow through the settling tank should be very slow, not exceeding about 3 inches per second at the baffles. Careful control of treating materials, preferably by automatic equipment, is necessary for any economical operation. Proper operation also implies that frequent water analysis be made, of the raw and of the treated water. Further; the method and materials of the treating must be suitable for the kind of raw water that is available, and for the degree of softness demanded. As stated before, inadequate water treating will seldom be justifiable, and there is little water available that does not demand some degree of treating for use in the refinery.

References.

1. U. S. Geological Survey papers; U. S. Government Printing Office.
2. Standard Methods for the Examination of Water and Sewage; American Public Health Association, 1925.
3. Conditioning of Refinery Water, Born, National Petroleum News, 1931.
4. Water Purification Plants and Their Operation; Stein; John Wiley & Sons, 1926.
5. Industrial Water Supplies; Foulk; State of Ohio.

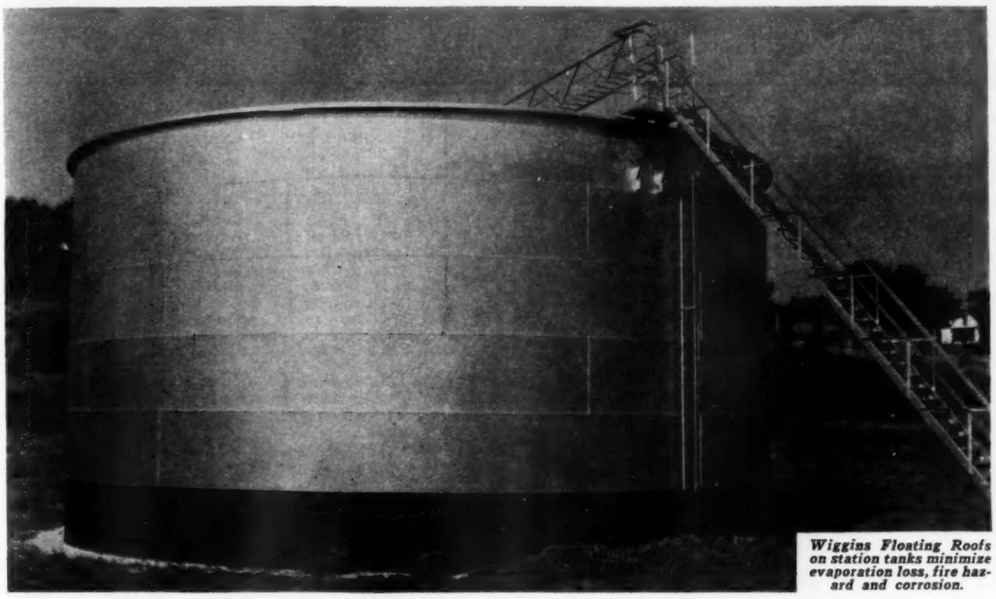
Hugh Grant, Well Known Eastern Operator, Dies

BRADFORD, Pa., June 4.—Hugh Grant, aged 73, credited with discovering the value of water flooding oil sands in the Bradford Field in 1891, died at his home here yesterday. Mr. Grant had been in failing health for two years.

It was on a lease that the McCalmont Oil Co. and later Oil Well Supply Co. had considered valueless save as junk that McGregor & Grant Co. noted a gradual increase in production. They rehabilitated the lease and young Hugh Grant, nephew of the partner, rightly defined the cause of increased output as the result of water encroachment from improperly plugged wells surrounding the lease. Until the success of water flooding became incontestable, Mr. Grant bought old production and urged his friends to do so. Later urging was unnecessary.

Mr. Grant was born in County Down, Ireland, and came to this country in 1882 and started work with the Hazelwood Oil Co. At the time of his death he was a member of the Pennsylvania Grade Crude Oil Association, the Knights of Columbus and Elks. He was a director of Bradford Refining Co., Bradford Supply Co. and Producers Bank.

A TYPE OF STORAGE TANK
—to meet every evaporation problem



Wiggins Floating Roofs on station tanks minimize evaporation loss, fire hazard and corrosion.

THE HORTONSPHERE
for 20 Lbs. pressure and up
THE HORTONSPHEROID
for 10 to 20 Lbs. pressure
THE RADIAL CONE TANK
for 5 to 10 Lbs. pressure
WIGGINS PONTOON ROOFS
for working storage tanks
WIGGINS BREATHER ROOFS
for standing storage tanks

"Three-in-One" Protection for Station Tanks Handling Sour Crude

STOPPING evaporation from oil in tanks has a direct relation to fire hazard. When that oil is sour crude, the elimination of vapor also has an important value in minimizing the corrosion of the tank roof. These three related losses take a tremendous toll unless adequate measures are adopted to control them.

Stopping Evaporation Loss

By equipping a tank with a roof which rides directly on the oil, filling and emptying losses are entirely eliminated. The resulting saving depends of course upon the volatility of the oil, the temperature and other variables. Experience with crude suggests that a conservative basis for estimating this saving is 200 bbls. per year per thousand bbls. of daily pumping.

It must be remembered that the oil lost through evaporation is not the average of the tank contents. It is almost entirely the lighter—and therefore the more valuable—fractions which evaporate.

Minimizing the Fire Hazard

Fire prevention is obviously preferable to fire fighting. Fortunately, the same roof which stops evaporation loss also removes the greatest fire hazard in oil tanks. Fires usually do not start in the oil, but in highly inflammable or explosive mixtures of oil vapor and air. Every rise in temperature expels some of this vapor from a gastight tank and if the roof is not *actually* gastight there is a continual leakage.

The Wiggins Roof eliminates this hazardous condition. Since the vapor space over the oil is eliminated, there is no venting of vapor when this roof protects the contents of the tank.

Reducing Tank Roof Corrosion

The life of steel roof plates is very short in tanks handling some sulphur-bearing oils. Experience proves that steel is corroded very slightly by the liquid oil but very rapidly by the oil vapor. Here again, the same characteristics of the Wiggins Roof which stop evaporation loss eliminate the condition which causes heavy corrosion loss. The roof rides on the liquid oil at all times. There is no vapor under the roof to corrode it.

Adaptable to Old Tanks

Wiggins Pontoon Roofs are easily installed on any tank with a good shell. In checking the condition of your tanks you may find some that need new roofs. At slight additional cost, you can put on Wiggins Roofs and pay the cost of the entire renewal out of savings.

Your problem may not involve sour oil. It may require pressure storage. But whatever it is, our experience in stopping evaporation will be of service to you. We specialize in this field and can show you by tests and field records what savings you may expect under given conditions. Consultation with us on evaporation engineering involves no obligation. Please address our nearest office.

CHICAGO BRIDGE & IRON WORKS

DALLAS	1241 Burt Bldg.	CHICAGO	2128 Old Colony Bldg.	PHILADELPHIA	1615 1700 Walnut St. Bldg.
HOUSTON	2919 Main Street	DETROIT	1514 Lafayette Bldg.	BOSTON	1517 Consolidated Gas Bldg.
TULSA	1606 Thompson Bldg.	CLEVELAND	2204 Rockefeller Bldg.	SAN FRANCISCO	1054 Rialto Bldg.
BIRMINGHAM	1536 Fiftieth St., N.	NEW YORK	3347-165 Broadway Bldg.	LOS ANGELES	1423 Wm. Fox Bldg.

Fabricating Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PA.

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

Quotations are exclusive of the Federal tax of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasolines

	June 5		May 29	
OKLAHOMA (Group 3)—				
U. S. Motor grades:				
Below 60 octane	.04⅛	.04⅜	.04¼	.04⅜
60-64.9 octane	.04¾	.04⅞	.04¾	.04⅞
65-70 octane	.05	.05⅛	.05	.05⅛
60-62 400 grades:				
Below 60 octane	.04⅜	.04½	.04⅜	.04½
60-64.9 octane	.04⅞	.05	.04⅞	.05
65-70 octane	.05	.05⅛	.05	.05⅛
64-66 375	.04½	.04⅝	.04½	.04⅝
68-70 360	.04⅝	.04¾	.04⅝	.04¾
NORTH TEXAS—				
U. S. Motor grades:				
Below 60 octane	.04	.04¼	.04⅛	.04⅜
60-64.9 octane	.04¾	.04⅞	.04¾	.04⅞
65-70 octane	.05	.05⅛	.05	.05⅛
60-62 400	.04¼	.04⅜	.04¼	.04⅜
64-66 375	.04⅜	.04½	.04⅜	.04½
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
68-70 360	.04¼	.04½	.04¼	.04½
U. S. Motor grades:				
Below 60 octane	.04⅝	.04⅞	.04⅝	.04⅞
60-64.9 octane	.05⅛	.05½	.05⅛	.05½
65-70 octane	.05½	.05¾	.05½	.05¾
60-62 400	.04⅝	.04⅞	.04⅝	.04⅞
ARKANSAS (Ark., N. La. & Miss. del.)—				
U. S. Motor grades:				
Below 60 octane	.04⅝	.04⅜	.04⅝	.04⅜
60-64.9 octane	.05⅛	.05½	.05⅛	.05½
65-70 octane	.05½	.05¾	.05½	.05¾
CHICAGO (based on Oklahoma Group 3)—				
U. S. Motor grades:				
Below 60 octane	.04¼	.04⅜	.04¼	.04½
60-64.9 octane	.04⅞	.05	.04⅞	.05
65-70 octane	.05⅛	.05¼	.05⅛	.05¼
60-62 400	.04⅜	.04½	.04⅜	.04½
64-66 375	.04½	.04⅝	.04½	.04⅝
68-70 360	.04⅝	.04¾	.04⅝	.04¾
Aviation fighting grade	.05¼	.05⅜	.05¼	.05⅜
PENNSYLVANIA (inland refineries)—				
58-60 U. S. Motor:				
Below 60 octane	.05½	.05¾	.05½	.05¾
60-64.9 octane	.06½	.06⅝	.06½	.06⅝
65-70 octane	.07	.07⅛	.07	.07⅛
68-70 350	.06¼	.06½	.06¼	.06½
CALIFORNIA (domestic movement)—				
54-58 U. S. Motor	.05½	.06½	.05½	.06½
58-60 400	.06¼	.07	.06¼	.07
EAST COAST—				
U. S. Motor, below 60 octane:				
New York	.06	.06¼	.06	.06¼
Baltimore	.06	.06¼	.06	.06¼
U. S. Motor, 60-64 octane:				
New York (Bayonne)	.06¼	.06½	.06¼	.06½
Philadelphia	.06½	.06¾	.06½	.06¾
Boston	.0645	.0670	.0645	.0670
Baltimore	.06¼	.06½	.06¼	.06½
Charleston, S. C.	.06¼	.06½	.06¼	.06½
U. S. Motor, 65 and above:				
New York (Bayonne)	.06½	.06¾	.06½	.06¾
Philadelphia	.06¾		.06¾	
Boston	.0670	.07	.0670	.07
Baltimore	.06½	.06¾	.06½	.06¾
Charleston, S. C.	.06½	.06¾	.06½	.06¾
GULF COAST (domestic)—				
U. S. Motor:				
Below 60 octane	.05¼	.05½	.05⅜	.05⅝
60-64.9 octane	.05½	.05⅝	.05⅝	.05¾
65 octane and higher	.05⅝	.05¾	.05¾	.06

Naphthas

	June 5		May 29	
PENNSYLVANIA (inland refineries)—				
50-54 430-450 (blending)	.05¼		.05¼	
CHICAGO (based on Oklahoma Group 3)—				
50-52 450 (blending)	.04¼	.04½	.04¼	.04½
Cleaners' naphtha, 56-58 gr., 200 i.b.p.-330 e.p.	.06¾	.07	.06¾	.07
Lacquer diluent, 180 i.b.p.-250 e.p.	.07¾	.08	.07¾	.08
Lacquent diluent, 140 i.b.p.-200 e.p.	.08¾	.09	.08¾	.09
Rubber solvent, 68-70 gr., 100 i.b.p.-330 e.p.	.06¾	.07	.06¾	.07
Stoddard solvent, 300 i.b.p.-410 e.p., over 83° flash	.06¼	.06½	.06¼	.06½
Pet. thinner, 290-300 i.b.p.-415 e.p., over 83° flash	.06¼	.06½	.06¼	.06½
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p.-330 e.p.	.06¾	.07	.06¾	.07
Petroleum spirits	.05¾	.06	.05¾	.06

Natural Gasolines

	June 5		May 29	
OKLAHOMA (Group 3)—				
Grade 26-70	.02⅜	.02½	.02½	
Grade 18-55	.03	.03⅛	.03	.03⅛
Low vapor pressure grades:				
15 lb. v.p. (max.)	.03⅜	.03½	.03⅜	.03½
11 lb. v.p. (max.)	.04	.04¼	.04	.04¼
NORTH TEXAS—				
Grade 26-70	.02¼		.02¼	
Grade 18-55	.02¾	.02⅞	.02¾	.02⅞
Low vapor pressure grades:				
15 lb. v.p. (max.)	.03¼	.03⅜	.03¼	.03⅜
11 lb. v.p. (max.)	.03⅞	.04	.03⅞	.04
NORTH LOUISIANA—				
Grade 26-70	.02⅞		.02⅞	
CALIFORNIA—				
75-78 375	.05	.06	.05	.06

Kerosenes

(All kerosenes water white)

	June 5		May 29	
OKLAHOMA (Group 3)—				
41-43	.03¼	.03½	.03¼	.03½
42-44	.03½	.03¾	.03⅝	.03¾
NORTH TEXAS—				
40-41	.03⅛	.03⅜	.03¼	.03⅜
41-43	.03¼	.03½	.03⅜	.03½
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
41-43	.03½		.03¾	
ARKANSAS (Ark., N. La. & Miss. del.)—				
41-43	.03¾		.03¾	
PENNSYLVANIA (inland refineries)—				
45	.04⅝	.04⅞	.04⅝	.04⅞
46	.04¾	.05¼	.04½	.05⅛
47	.05⅛	.05⅜	.05⅛	.05⅜
CHICAGO (based on Oklahoma Group 3)—				
41-43	.03½	.03⅝	.03½	.03¾
42-44	.03⅝	.03⅞	.03¾	.04
CALIFORNIA (Pacific Coast consumption)—				
38-40 high burning test	.04¾	.05	.04¾	.05
NEW YORK (Bayonne, N. J.)—				
41-43	.05½	.05¾	.05½	.05¾
GULF COAST (domestic)—				
41-43	.04½	.04⅝	.04½	.04⅝

Petroleum Coke

(Prices per ton f.o.b. refineries in Chicago area)
(Refineries will absorb freight to 80 cents a ton)

	June 5		May 29	
Breeze (screenings)	5.00		5.00	
Pile run	5.00		5.00	
Direct from still	6.00		6.00	
Lump and egg	7.00	8.00	7.00	8.00

Furnace Oils and Tractor Fuels

(Zero cold test under 190° flash and good odor)

	June 5		May 29	
OKLAHOMA (Group 3)—				
32-36 straw	.02⅝	.02¾	.02⅝	.02¾
36-38 straw	.02⅝	.02¾	.02⅝	.02¾
38-40 straw	.02¾	.02⅞	.02¾	.02⅞
39-41 prime white	.02⅞	.03	.02⅞	.03
NORTH TEXAS—				
38-40 straw	.02¾	.03	.02¾	.03
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
36-40 furnace oil	.03		.03	
ARKANSAS (Ark., N. La. & Miss. del.)—				
32-36 furnace oil	.02¾	.02⅞	.02¾	.02⅞
CHICAGO (based on Oklahoma Group 3)—				
32-36 straw	.02⅝	.02⅞	.02⅝	.02⅞
38-40 straw	.02¾	.02⅞	.02¾	.02⅞
38-40 prime white	.02⅞	.03	.02⅞	.03
NEW YORK (Bayonne, N. J.)—				
36-40 (No. 1 grade)	.05½	.05¾	.05½	.05¾
32-36 (No. 2 grade)	.04¾	.05	.04¾	.05
21 industrial (No. 4 grade)	.04¾	.05	.04½	.05

Gas Oil, Diesel Oil and Fuel Oil

(Gas oil per gallon; Diesel and fuel oils per barrel)

	June 5		May 29	
OKLAHOMA (Group 3)—				
32-36 gas oil cracking stocks	.02¼	.02⅜	.02⅜	.02½
U.G.I. gas oil	.02¼	.02⅜	.02⅜	.02½
32-36, zero to 15 gas oil	.02½	.02⅝	.02½	.02⅝
28-30, No. 3 burner oil	.95	1.00	.95	1.00
28-30, zero to 10 fuel oil	.90	.95	.90	.95
26-30, zero to 10 fuel oil	.85	.95	.85	.95
24-26 fuel oil	.77½	.80	.72½	.75
20-22 fuel oil	.67½	.70	.67½	.70
Below 16 fuel oil	.62½	.65	.62½	.65
NORTH TEXAS—				
32-36 gas oil, industrial	.02		.02	
22-26 fuel oil	.67½	.70	.65	.67½
Below 20 fuel oil	.57½	.62½	.55	.60
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
32-36 gas oil, zero	.02⅝	.02¾	.02¾	.03
14-16 fuel oil	.70	.75	.70	.75
ARKANSAS (Ark., N. La. & Miss. del.)—				
30-32 gas oil, zero	.02⅝	.02¾	.02¾	.03
32-36 gas oil	.02½	.02⅝	.02½	.02¾
14-16 fuel oil	.70	.75	.70	.75
CHICAGO (based on Oklahoma Group 3)—				
32-36 gas oil, industrial	.02¼	.02½	.02¼	.02½
28-30 zero to 10, fuel oil	.97½	1.02½	.97½	1.02½
26-28 zero to 10, fuel oil	.87½	.90	.87½	.90
22-26 zero to 10, fuel oil	.77½	.80	.77½	.80
18-22 zero to 10, fuel oil	.65	.67½	.65	.67½
Below 18 fuel oil	.57½	.60	.55	.60

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel less in all these areas.

PENNSYLVANIA (inland refineries)—				
36-40	.04	.04⅛	.04	.04⅛
CALIFORNIA—				
30-34 gas oil per bbl.	1.00	1.10	1.00	1.10
27 plus Diesel	1.05	1.10	1.05	1.10
15-19 bunker (at tidewater)	.60	.70	.60	.70
15-19 (cargo lots)	.55	.60	.55	.60
15-19 (tank cars)	.50	.65	.50	.65
GULF COAST—				
28-30 gas oil	.03½	.03¾	.03½	.03¾
28-30 Diesel (bunkers)	1.80		1.80	
Bunker C (bulk cargoes)	.95	1.00	.95	1.00
Bunker C (bunkers)	1.05	1.10	1.15	
NEW YORK (Bayonne, N. J.)—				
28 plus, gas oil	.04½	.05	.04½	.05
28-30 Diesel (lighterage 6½ cents per bbl.)	1.95		1.95	
28-30 Diesel (tank cars)	.04¾	.05	.04¾	.05
*Bunker C (to ocean-going ships in N. Y. harbor)	1.30		.130	

*Lighterage charge 5 cents per barrel additional.

Neutral Oils

(Vis. at 100° F. except Pennsylvania, and color N.P.A.)

	June 5		May 29	
OKLAHOMA (Group 3)—				
Zero to 10 Cold Test:				
150-3	.09½		.09½	
180-3	.10¾		.10¾	
180-4	.10¼		.10¼	
200-3	.11¼		.11¼	
200-4	.10¾		.10¾	
240-3	.13¼		.13¼	
240-4	.12¾		.12¾	
280-3	.14¼		.14¼	
280-4	.13½		.13½	
300-3½	.14¾		.14¾	
400-4	.16¾		.16¾	
100-2 paraffin oil	.06½		.06½	
15-30 Cold Test:				
200-3	.10¼		.10¼	
200-4	.09¾		.09¾	
240-3	.12¼		.12¼	
240-4	.11¾		.11¾	
280-3	.13¼		.13¼	
280-4	.12½		.12½	
GULF COAST—				
Pale Oils:				
200-3	.07½		.07½	
300-3	.08	.08¼	.08	.08¼
500-3½	.09	.09¼	.09	.09¼
750-3½	.09½	.09¾	.09½	.09¾
1,200-3½	.10	.10¼	.10	.10¼
2,000-4	.10¼	.10½	.10¼	.10½
Red Oils:				
200-5-6	.06½		.06½	
300-5-6	.07	.07¼	.07	.07¼
500-5-6	.08	.08¼	.08	.08¼
750	.08½	.08¾	.08½	.08¾
1,200-5-6	.09	.09¼	.09	.09¼
CALIFORNIA—				
Pale Oils:				
100-2½-3	.23	.25	.23	.25
200-2½-3	.23	.25	.23	.25
300-3-3½	.23	.25	.23	.25
350-3-4	.23	.25	.23	.25
400-3-4	.23	.25	.23	.25
450-3-4	.23	.25	.23	.25
550-3-4	.23	.25	.23	.25
600-3-4	.23	.25	.23	.25
Red Oils:				
200-4-5	.23	.25	.23	.25
300-5-6	.23	.25	.23	.25
350-5-6	.23	.25	.23	.25
400-5-6	.23	.25	.23	.25
450-5-6	.23	.25	.23	.25
500-5-6	.23	.25	.23	.25

600-5-6½	.23	.25	.23	.25
700-6½ plus	.23	.25	.23	.25
750-6½ plus	.23	.25	.23	.25
900-6½ plus	.23	.25	.23	.25
PENNSYLVANIA—				
150 vis. at 70° F., 3 color; 400-405 flash:				
Zero pour test	.25½	.26	.25½	.26
10 pour test	.24½	.25	.24½	.25
15 pour test	.24	.24½	.24	.24½
25 pour test	.23	.23½	.23	.23½
180 vis. at 70° F., 3 color:				
25 pour test	.27	.27½	.27	.27½
200 vis. at 70° F., 3 color:				
Zero pour test	.32	.33½	.32	.33½
10 pour test	.30½	.32	.30½	.32
15 pour test	.30	.30½	.30	.30½
25 pour test	.29½	.30	.29½	.30

Bright and Steam Refined Stocks

OKLAHOMA (Group 3)—	June 5		May 29	
Bright Stocks:				
190-200 D	.27¼		.27¼	
150-160 D, 0-10	.24½		.24½	
150-160 D, 10-25	.24		.24	
150-160 25-40	.23½		.23½	
150-160 E	.23½		.23½	
Steam refined:				
630 light green (treated)	.15½		.15¼	
600 light green (untreated)	.07½	.09	.07½	.09
600 dark green (untreated)	.05½	.08	.05½	.08
PENNSYLVANIA—				
Steam refined:				
600	.19	.19½	.19	.19½
650	.21½	.22	.21½	.22
600 Pennsylvania flash	.22½	.23	.22½	.23
630 Pennsylvania flash	.27	.27½	.27	.27½
600 Warren E filtered	.22	.22½	.22	.22½
Bright Stocks (Pennsylvania grade, No. 8 color, 145-50 at 210; 540-550 flash):				
10 pour test	.30	.30½	.30	.30½
15 pour test	.29½	.30	.29½	.30
20 pour test	.29	.29½	.29	.29½
25 pour test	.28½	.29	.28½	.29

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—	June 5		May 29	
124-126 white crude scale	.03⅝	.03¾	.03⅝	.03¾
PENNSYLVANIA—				
122-124	.0370		.0370	
124-126	.0375		.0375	
NEW YORK HARBOR—				
Wax (a.m.p.) in bags fully refined:				
120-122	.0420	.0430	.0420	.0430
123-125	.0440	.0460	.0440	.0460
125-127	.0445	.0470	.0445	.0470
128-130	.0480	.0495	.0480	.0495
130-132	.05	.0510	.05	.0510
133-135	.0545	.0570	.0545	.0570
135-137	.0570	.0595	.0570	.0595
124-126 crude scale	.03½	.03¾	.03½	.03¾
Petrolatum in barrels in carload lots:				
Dark green	.01⅞		.01⅞	
Amber	.02⅛	.03	.02⅛	.03
Extra amber	.03⅛	.03¼	.03⅛	.03¼
Lily white	.06¾	.06⅞	.06¾	.06⅞
Snow white	.07¾	.07⅞	.07¾	.07⅞
Cream	.05⅝	.05¾	.05⅝	.05¾
CHICAGO (f.o.b. switching district)*—				
122-124 wax	.0490	.0500	.0490	.0500
125-127 wax	.0515	.0525	.0515	.0525
127-129 wax	.0530	.0540	.0530	.0540
130-132 wax	.0590	.0600	.0590	.0600
132-134 wax	.0615	.0625	.0615	.0625

*Cents per pound on carlot orders in burlap bags of 225 lbs. approx. Add 3° F. a.m.p.

Export Prices

GASOLINE

GULF COAST—	June 5		May 29	
U. S. Motor	.04¼	.04⅜	.04¼	.04⅜
60-62 400	.04⅜		.04⅜	
61-63 390	.04½	.04⅝	.04½	.04⅝
64-66 375	.04⅝	.04¾	.04⅝	.04¾
LOS ANGELES, CALIF.—				
U. S. Motor grades:				
53-55 octane	.04	.04¼	.04	.04¼
55-65 octane	.04¼	.04½	.04¼	.04½
65-67 octane	.04½	.04¾	.04½	.04¾
67-69 octane	.04¾	.05	.04¾	.05
Above 69 octane	.05	.05¼	.05	.05¼
58-60 400 endpoint	.04¾	.05½	.04¾	.05½

KEROSENE

GULF COAST—				
41-43 prime white	.04⅛	.04¼	.04⅛	.04¼
41-43 water white	.04¼	.04⅜	.04¼	.04⅜
44 water white	.04⅜	.04½	.04⅜	.04½
LOS ANGELES, CALIF.—				
41-43 water white	.04¼	.04¾	.04¼	.04¾

LUBRICANTS

NEW YORK (f.a.s. in bbls.)—				
Cylinder Stocks:				
600 Warren E	.28	.29	.28	.29
600 S.R. unfiltered	.26	.26½	.26	.26½
650 S.R. unfiltered	.28	.28½	.28	.28½
600 flash S.R.	.29	.29½	.29	.29½
630 flash S.R.	.33½	.34	.33½	.34
Bright Stocks:				
8 color	.35½	.37	.36	.37½
6½ plus color, in dilution	.34½		.35	

NEUTRAL OILS

200-3 color	.37	.38	.37	.38
150-3 color	.32	.33	.32	.33

PARAFFIN WAX (Fully Refined)

NEW YORK (prices per pound)—				
120-122 a.m.p.	.0405	.04¼	.0405	.04¼
123-125 a.m.p.	.0430	.0455	.0430	.0455
125-127 a.m.p.	.0440	.0465	.0440	.0465
128-130 a.m.p.	.04¾	.0490	.04¾	.0490
130-132 a.m.p.	.0495	.0505	.0495	.0505
133-135 a.m.p.	.0540	.0565	.0540	.0565
135-137 a.m.p.	.0565	.0590	.0565	.0590

Crude Oil Gravity Table

Degrees gravity—	1 Oklahoma and Kansas	2 North Texas, Central Texas and East Central Texas	3 North Louisiana and Arkansas	4 Gray County, Texas	5 Carson, Hutchinson, and Moore Counties, Texas	6 Conroe, Texas	7 Salt Creek, Wyo.	8 Gulf Coast, Texas, and Louisiana	9 Gulf Coast, Texas, and Louisiana	10 Cotton Valley, Louisiana
Below 20	....	....	....	....	....	....	....	$.82	$.82	....
20-20.9	....	....	....	....	....	....	....	.84	.84	....
21-21.9	....	....	....	....	....	....	....	.86	.86	....
22-22.9	....	....	....	....	....	....	....	.88	.88	....
23-23.9	....	....	....	....	....	....	....	.90	.90	....
24-24.9	....	....	....	....	....	....	....	.93	.93	....
Below 25	*$.76	....	....	....	....	....	....	....	....	$.70
25-25.9	*.78	....	....	....	....	....	....	.94	.94	.72
26-26.9	*.80	....	....	....	....	....	....	.96	.96	.74
27-27.9	*.82	....	....	....	....	....	....	.98	.98	.76
28-28.9	*.84	....	....	....	....	....	....	1.00	1.00	.78
Below 25	.84	$.79	$.79	....	....	....	$.84	....	....	....
25-25.9	.86	.81	.81	....	....	....	.86	1.02	1.02	.80
26-26.9	.88	.83	.83	....	....	....	.88	1.04	1.04	.82
27-27.9	.90	.85	.85	....	....	....	.90	1.06	1.05	.84
28-28.9	.92	.87	.87	....	....	....	.92	1.08	1.06	.86
29-29.9	.94	.89	.89	....	....	....	.94	1.10	1.07	.88
30-30.9	.96	.91	.91	....	....	....	.96	1.12	1.08	.90
Below 35	....	....	....	$.79	$.69	....	....	....	....	....
35-35.9	.98	.93	.93	.81	.71	$1.09	.98	1.12	1.09	.92
36-36.9	1.00	.95	.95	.83	.73	1.11	1.00	1.12	1.10	.94
37-37.9	1.02	.97	.97	.85	.75	1.13	1.02	1.12	1.11	.96
38-38.9	1.04	.99	.99	.87	.77	1.15	1.04	1.12	1.13	.98
39-39.9	1.06	1.01	1.01	.89	.79	1.17	1.06	1.12	1.13	1.00
40 and over	1.08	1.03	1.03	.91	.81	1.19	1.08	1.12	1.14	1.02

Note.—Effective June 1, 1934, Texas Co. purchases Texas Panhandle crude on a sweet crude and sour crude basis. Panhandle sweet crude is paid for on a basis of the Gray County prices posted above, and Panhandle sour crude is paid for on a basis of Carson and Hutchinson County prices posted above.

*The following companies purchasing crude oil in Kansas or Oklahoma, or both, begin their price schedule: Below 25°, 76 cents; 25-25.9°, 78 cents, with 2 cents added for each degree upward to 40 and over at $1.08; Carter Oil Co., Magnolia Petroleum Co., Pure Oil Co., Rock Island Refining Co., Shell Petroleum Corp., Sinclair Prairie Oil Marketing Co., Skelly Oil Co., and Wilcox Oil & Gas Co. All others begin their schedules at below 29°, 84 cents, excepting Phillex Oil Co., which begins with below 31° at 88 cents.

Column 1.—Effective September 29, Texas Co. in Oklahoma; Stanolind Crude Oil Purchasing Co. in Kansas and Oklahoma; Anderson & Prichard, Inc., in Oklahoma; Bell Oil & Gas Co. in Oklahoma; Carter Oil Co. in Oklahoma and Kansas; Deep Rock Oil Co. in Oklahoma; Derby Oil Co. in Kansas; Globe Refining Co. in Oklahoma; Golden Rule Refining Co. in Kansas; Gypsy Oil Co. in Oklahoma and Kansas; Kanotex Refining Co. in Kansas; Magnolia Petroleum Co. in Oklahoma; Mid-Continent Petroleum Corp. in Oklahoma; National Refining Co. in Kansas and Oklahoma; Shell Petroleum Corp. in Kansas and Oklahoma; Sinclair Prairie Oil Marketing Co. in Kansas and Oklahoma; Texas Co. in Oklahoma; Tide Water Oil Co. in Oklahoma; Vickers Refining Co. in Kansas; Continental Oil Co. in Kansas and Oklahoma; Empire Pipe Line Co. in Oklahoma and Kansas; Phillex Oil Co. in Kansas and Oklahoma; Pure Oil Co. in Oklahoma; Skelly Oil Co. in Kansas. Effective September 29, by White Eagle Oil Corp. in Kansas; Oct. 1 by Barnsdall Refineries, Inc., in Oklahoma.

Column 2.—Effective September 29, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Bell Oil & Gas Co., Continental Oil Co. Effective September 29, in the Van Pool, Van Zandt County, Pure Oil Co. posted below 29°, 84 cents, with 2 cents added for each degree up to 40 and over at $1.08.

Column 3.—Effective September 29, by Texas Co., Magnolia Petroleum Co., Gulf Refining Co. Effective December 22, Stanolind Oil & Gas Co. in Pine Island, Louisiana, and Marion County, Texas, posted below 29°, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03. Effective March 17, 1934, by Standard Oil Co. of Louisiana and Louisiana Oil Refining Co. Starting with below 25°, 71 cents, adding 2 cents for each degree upward to 40 and over at $1.03.

Column 4.—Effective September 29, by Texas Co., Humble Oil & Refining Co., Magnolia Petroleum Co., Sinclair Prairie Oil Marketing Co., and H. F. Wilcox Oil & Gas Co. On same day Phillex Oil Co. posted below 31°, 71 cents, with 2 cents added for each degree up to 40 and over at 91 cents. Effective June 1, 1934, Texas Co. (see note above).

Column 5.—Effective September 29, by Texas Co., Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Wilcox Oil & Gas Co., Continental Oil Co. On same day, Phillex Oil Co. posted below 31°, 61 cents, with 2 cents added for each degree upward to 40 and over at 81 cents. Effective June 1, 1934, Texas Co. (see note above).

Colum 6.—Effective September 29, by Humble Oil & Refining Co. and Tide Water Oil Co., and on September 30, by Texas Co. which on September 29 had posted a schedule of $1.07 to $1.12 with a 1-cent spread on each degree.

Column 7.—Effective September 29, by Stanolind Oil & Gas Co.

Column 8.—Effective September 29, by Humble Oil & Refining Co., Gulf Pipe Line Co., Shell Petroleum Corp., Pure Oil Co., Sinclair Prairie Oil Marketing Co. On October 2, Magnolia Petroleum Co. posted Lockport, Louisiana: 20-20.9°, 84 cents with 2 cents added for each degree upward to 34 and over at $1.12, and in Cameron Meadows and Iowa, Louisiana: Below 20°, 72 cents with 2 cents added for each degree up to 34 and over at $1.02. These prices were 2 cents higher on each degree than Magnolia prices posted on September 29. Effective September 29, Shell Petroleum Corp. posted in Iowa, Louisiana, district: Below 20° 70 cents, with 2 cents added for each degree upward to 34° and over at $1; and in Black Bayou and White Castle, Louisiana: Below 20°, 80 cents, with 2 cents added for each degree upward to 34° and over at $1.10.

Column 9.—Effective September 30, Texas Co. (On September 29, Texas Co. had posted a schedule of 2 cents on each degree, but changed it on September 30.)

Column 10.—Effective September 29, by Louisiana Oil Refining Co.

(California Crude Oil Prices on Page 85)

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas	$1.00
Stratman, Kans. (Sept. 29, 1933)	1.08
Corsicana (heavy) (June 17, 1933)*	.30
Other fields	(See gravity table)

Note—In East Texas, effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Shell Petroleum Corp., Gulf Pipe Line Co., Tide Water Oil Co., Sinclair Prairie Oil Marketing Co., Magnolia Petroleum Co., Sun Oil Co., Panola Pipe Line Co., and Empire Oil & Refining Co.

*Magnolia Petroleum Co.

West Texas

Crane, Upton, Crockett, Howard, Glasscock, Mitchell (Sept. 29, 1933)	$ .70
Ector, Winkler and Pecos Counties and Lea County, New Mexico (Sept. 29, 1933)	.72
Pecos County, Yates shallow pool (Sept. 29, 1933)*	.65
Jones and Fisher Counties.	See gravity table.

Note—Effective September 29, 1933, by Humble Oil & Refining Co., Texas Co., Gulf Pipe Line Co., Shell Petroleum Corp., Magnolia Petroleum Co., and by Stanolind Oil & Gas Co. in Winkler County, Texas.

*Shell Petroleum Corp.

Gulf Coast

Grade A and Grade B specifications discontinued by leading buyers	(See gravity table)
Tomball (see note)*	$1.15
Livingston (Sept. 29, 1933)†	1.00
Cleveland (Jan. 11, 1934)	1.00
Greta (Sept. 29, 1933)	.85
Refugio, light	(See gravity table)
Refugio, heavy (Sept. 29, 1933)‡	.85
Markham and High Island	(See Gulf Coast gravity table)
Conroe	(See Conroe gravity table)

Note—Tomball, effective September 29, by Humble Oil & Refining Co., and October 2 by Magnolia Petroleum Co., and November 10 by Stanolind Oil & Gas Co.

*Greta posted by Texas Co. †Shell Petroleum Corp. ‡Refugio heavy, by Humble Oil & Refining Co. Cleveland (Liberty County), posted by Magnolia Petroleum Co.

South Central and Southwest Texas

(See note below table)

Darst Creek	$.87
Mirando	.80
Luling (Sept. 29, 1933)	.75
Pettus	1.05
Salt Flat	.87
Lytton Springs (Sept. 29, 1933)	.95
Duval County (Sept. 29, 1933)	.80
Saxet	.85

Note—Effective on September 29 by Humble Oil & Refining Co., in Darst Creek, Mirando, Pettus, Salt Flat and Saxet. Effective September 29 in Darst Creek by Gulf Pipe Line Co. and Texas Co. Effective October 2 by Magnolia Petroleum Co. Effective in Pettus and Salt Flat on September 29 by Humble Oil & Refining Co. and Gulf Pipe Line Co. Luling and Lytton Springs by Magnolia Petroleum Co. Duval County by Texas Co. Saxet, effective September 29, by Humble Oil & Refining Co. and Texas Co.

(Continued on Page 85)

TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

June 5, 1934

Taxes

The gasoline quotations given in the following tables include the 1 cent Federal tax, as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third grade and a premium grade are also available.

Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank wagon, or 2 cents a gallon off retail prices, is permitted for purchases running between 1,000 and 10,000 gallons a month, and 2 cents a gallon off tank wagon, or 4 cents a gallon off retail prices, for purchases in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Denver, Colo.	18.0	20.0	6.0	10.0
Pueblo	18.0	20.0	6.0	13.0
Grand Junction	20.5	22.5	6.0	15.0
Casper, Wyo.	18.0	20.0	5.0	11.5
Cheyenne	18.0	20.0	5.0	18.0
Butte, Mont.	21.0	23.0	5.0	17.5
Billings	21.0	23.0	6.0	16.5
Helena	22.5	24.5	6.0	17.5
Great Falls	20.0	22.0	6.0	17.5
Salt Lake, Utah	21.0	23.0	5.0	16.0
Boise, Idaho	22.0	24.0	6.0	18.0
Twin Falls	22.0	24.0	6.0	18.0
Albu'que, N. M.	19.5	21.5	*7.0	13.0

*One-cent city tax.

Effective March 1, 1934, discount to dealers with or without contract throughout Continental territory: Undivided dealer discount off service station price, 4 cents; divided dealer accounts, 3½ cents.

Standard Oil Co. (Indiana)

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Chicago	16.3	17.3	4.0	9.7
Decatur, Ill.	16.0	18.0	4.0	10.2
E. St. Louis	16.0	14.5	4.0	9.5
Joliet	14.2	16.2	4.0	10.2
Peoria	16.7	16.7	4.0	10.2
Quincy	16.6	14.5	4.0	10.0
Davenport, Ia.	16.6	18.6	4.0	10.1
Des Moines	16.6	18.6	4.0	10.1
Mason City	16.6	17.6	4.0	9.3
Sioux City	12.9	13.9	4.0	8.7
Duluth, Minn.	17.2	19.2	4.0	10.4
Mankato	16.8	16.8	4.0	10.2
Minneapolis	15.4	17.4	4.0	10.4
LaCrosse, Wis.	18.2	20.3	4.8	10.8
Green Bay	17.7	19.7	5.0	10.2
Milwaukee	17.1	19.1	5.0	9.7
Madison	17.4	19.4	5.0	9.9
Detroit, Mich.	17.0	19.0	4.0	10.5
Grand Rapids	16.7	18.7	4.0	10.2
Saginaw	17.0	19.0	4.0	10.5
Evansville, Ind.	17.7	19.7	5.0	10.0
Indianapolis	17.8	19.8	5.0	10.3
South Bend	18.3	20.3	5.0	10.5
Fargo, N. Dak.	17.9	19.9	4.0	12.1
Huron, S. Dak.	18.8	20.8	5.0	11.4
Sioux Falls	18.4	20.4	5.0	10.9
Kans. C., Mo.*	15.0	15.0	4.0	9.2
Springfield	15.1	17.1	3.5	9.1
St. Louis	15.0	17.0	3.5	8.7
St. Joseph*	15.3	15.0	4.0	8.8
Wichita, Kans.	14.6	16.6	4.0	10.2
Bartlesville, Ok.	16.0	18.5	5.0	10.5

*State tax 2 cents, 1-cent city tax and 1-cent Federal tax.

Discounts to dealers, effective March 1, 1934: Undivided accounts, 4 cents a gallon on Red Crown Ethyl and Standard Red Crown, divided accounts, 3½ cents a gallon on Red Crown Ethyl and Standard Red Crown.

Stanolex Furnace Oil in Chicago

Effective May 16, 1934, f.o.b. Chicago, tank wagon prices: No. 1 (36-40 lt. stw. zero), under 150 gallons, 8¼ cents; No. 2 (30-34 stw zero), under 150 gallons, 7¾ cents; No. 3 (22-26 zero), under 150 gallons, 7½ cents; No. 4 (12-16 zero), under 400 gallons, 6 cents; viscosity of No. 4, 90-115 at 100° F.; No. 5, under 400 gallons, 5¾ cents. For deliveries above stated quantities deduct 1 cent.

Naphtha

	Tank wagon*
Oleum spirits	16.9
V.M.&P. naphtha	18.0
Cleaners' naphtha	18.0
Stanisol	18.0

*Prices include 3-cent Illinois tax, but not 1-cent Federal tax.

Prices f.o.b. Chicago, September 13, 1933. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Atlanta, Ga.	20.0	22.0	7.0	14.5
Augusta	20.0	22.0	7.0	14.5
Macon	20.0	22.0	7.0	14.5
Savannah	20.0	22.0	7.0	14.0
Birm'ham, Ala.	21.5	23.5	8.0	12.0
Mobile	20.5	22.5	8.0	12.0
Montgomery	22.5	24.5	8.0	15.0
Jackson, Miss.	19.5	21.5	7.0	14.0
Vicksburg	18.5	20.5	7.0	14.0
Jack'ville, Fla.	20.0	22.0	8.0	11.5
Miami	20.0	22.0	8.0	13.5
Pensacola	18.0	20.0	8.0	13.5
Tampa	20.0	22.0	8.0	12.5
Lexington, Ky.	18.5	20.5	6.0	11.5
Covington	17.5	19.5	6.0	11.5
Louisville	18.0	20.0	6.0	11.5
Paducah	14.5	16.5	6.0	11.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia and Mississippi include 1 cent state tax; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline; in Florida an inspection fee of one-eighth cent on kerosene and gasoline. To Pensacola, Mobile and Birmingham state taxes on gasoline add 1 cent city tax.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Dallas, Tex.	17.0	19.0	5.0	8.0
Fort Worth	17.0	19.0	5.0	7.0
Houston	16.0	18.0	5.0	8.5
San Antonio	17.0	19.0	5.0	8.5
El Paso	18.0	20.0	5.0	11.0
Muskogee, Ok.	16.0	18.0	5.0	7.5
Okla. City	13.0	15.0	5.0	8.5
Tulsa	16.0	18.0	5.0	8.5
Ft. Smith, Ark.	16.1	18.1	5.0	8.0
Little Rock	19.1	21.1	7.5	9.0
Texarkana	17.0	19.0	5.0	7.0

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Atl'tic City, N. J.	19.0	18.5	4.0	10.0
Newark	18.3	17.8	4.0	9.5
Annapolis, Md.	19.6	19.1	5.0	10.0
Baltimore	19.1	18.6	5.0	9.5
Cumberland	20.6	20.1	5.0	12.7
Wash'g'n, D. C.	17.3	16.8	3.0	11.5
Danville, Va.	21.7	21.2	6.0	12.9
Norfolk	20.2	19.7	6.0	11.3
Petersburg	21.0	20.5	6.0	11.4
Richmond	20.6	15.6	6.0	11.7
Roanoke	21.8	15.4	6.0	12.9
Charlo'n, W. Va.	20.0	19.5	5.0	12.6
Parkersburg	19.3	15.4	5.0	11.2
Wheeling	20.0	19.5	5.0	12.2
Charlotte, N. C.	23.4	22.9	7.0	13.5
Hickory	23.7	22.0	7.0	13.7
Mt. Airy	23.7	23.2	7.0	13.8
Raleigh	23.2	22.0	7.0	13.3
Salisbury	23.5	23.0	7.0	13.6
Charleston, S. C.	21.2	20.7	7.0	11.3
Columbia	23.0	22.5	7.0	13.2
Spartanburg	23.4	22.0	7.0	13.5

Price basis to dealers: Divided dealers at dealer price, which is 2½ cents above tank car; undivided dealers at regular price less one-half cent. Discount for kerosene, 1 cent off tank wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except in New Jersey, where no discount is given.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Omaha	17.3	19.3	5.0	9.0
McCook	18.4	18.4	5.0	9.0
Norfolk	17.0	17.0	6.0	9.0
North Platte	18.0	18.0	5.0	9.0
Scottsbluff	18.8	19.3	5.0	11.0

Note—Discount to dealers, including any rentals under lease and agency agreements: Undivided accounts, Standard Red Crown and Red Crown Ethyl Gasoline 4 cents, Reliance (third brand) 3 cents, under service station price. Divided accounts, Standard Red Crown Ethyl Gasoline 3½ cents, Reliance (third brand) 2½ cents, under service station price. Discounts to consumers covered only by form CD-1, official commercial consumer contract.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
N. Orleans, La.	20.3	16.5	*7.0	†10.0
Baton Rouge	19.7	19.2	6.0	†12.0
Alexandria	20.6	20.1	*7.0	†10.0
Lafayette	20.8	20.3	*7.0	†12.0
Lake Charles	20.7	20.2	*7.0	†12.0
Shreveport	18.5	18.0	6.0	†12.0
Knoxville, Tenn.	24.2	23.2	8.0	13.0
Memphis	22.6	16.0	8.0	10.5
Chattanooga	24.0	23.5	8.0	13.0
Nashville	23.5	16.0	8.0	11.0
Bristol	24.0	19.0	8.0	14.0

*Includes city tax of 1 cent. †Louisiana kerosene prices include 1-cent state tax.

Price bases to dealers: Divided dealers at dealer price, which is 2½ cents above tank car; undivided dealers at dealer price less one-half cent.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA*

	Gasoline: Tank wagon†	Posted retail	Incl'ds tax of	Kero. tank wagon
San Francisco	14.0	17.0	4.0	13.5
Los Angeles	12.0	15.0	4.0	12.5
Fresno, Calif.	14.5	17.5	4.0	14.0
Phoenix, Ariz.	18.5	21.5	6.0	‡16.0
Reno, Nev.	19.5	22.5	5.0	15.5
Portland, Ore.	19.0	22.0	6.0	13.5
Seattle, Wash.	19.0	22.0	6.0	13.5
Tacoma	19.0	22.0	6.0	13.5
Spokane	22.0	25.0	6.0	18.0

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Prices are at company's plant or depots, as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

‡Includes 5 cents state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Philadelphia, Pa.	15.5	17.5	4.0	10.0
Pittsburgh	16.0	18.0	4.0	10.0
Allentown	15.5	17.5	4.0	10.0
Erie	16.0	18.0	4.0	9.0
Scranton	16.0	18.0	4.0	10.0
Altoona	16.0	18.0	4.0	10.0
Dover, Del.	16.0	18.0	4.0	10.0
Wilmington	16.0	18.0	4.0	9.0
Springf'd, Mass.	15.5	17.5	4.0	8.75
Worcester	16.5	18.5	4.0	9.0
Hartford, Conn.	15.4	17.4	3.0	8.5
New Haven	15.2	17.2	3.0	8.5
Providence, R.I.	13.5	15.5	3.0	8.5

Note—Tank wagon prices are those applicable to consumers purchasing lots of 100 or more gallons in one delivery.

New York and Part of New England

STANDARD OIL CO. OF NEW YORK

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Albany, N. Y.	17.1	18.1	4.0	9.0
Met. New York	16.5	17.5	4.0	8.5
Buffalo	17.5	18.5	4.0	9.0
Rochester	17.5	18.5	4.0	9.25
Syracuse	17.0	18.0	4.0	9.25
Boston, Mass.	16.5	17.5	4.0	8.5
Portland, Me.	18.2	19.2	5.0	8.75
Manch't'r N. H.	19.2	20.2	5.0	9.0
Burlington, Vt.	19.8	20.8	5.0	9.75

Commercial consumers allowed 2 cents discount below service station prices in accordance with CD-1 of oil industry's code.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Ohio points	17.5	19.5	5.0	*13.5

*Includes state tax of 1 cent, effective July 22

Canada*

IMPERIAL OIL, LTD.
Imperial 3-Star Gasoline

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Hamilton, Ont.	†21.5	24.5	6.0	17.5
Toronto, Ont.	†21.5	24.5	6.0	17.5
Brandon, Man.	30.3	33.3	7.0	21.8
Winnipeg, Man.	28.7	31.7	7.0	20.2
Regina, Sask.	29.0	33.0	6.0	21.5
Saskatoon, Sask.	31.8	34.8	6.0	24.1
Edmonton, Alta.	31.3	34.3	6.0	23.7
Calgary, Alta.	28.5	31.5	6.0	21.6
Vancouver, B.C.	†28.0	31.0	7.0	24.0
Montreal, Que.	24.0	27 0	6.0	17.5
St. John, N.B.	27.5	31.5	8.0	21.0
Halifax, N. S.	26.0	30.0	6.0	21.0

*Imperial gallon used in Canada. †Governed by service station price.

Maritime provinces, all dealers 4 cents off service station price. All other provinces, open dealers 3 cents off service station price and 1 cent additional to 100 per cent accounts.

Retail Price Changes

Regular-Grade Gasoline and Kerosene

Standard Oil Co. (Indiana) May 29 advanced gasoline tank wagon price 1.3 cents and gasoline station price 3.3 cents in Milwaukee. June 4, advanced gasoline tank wagon and station prices 2½ cents in metropolitan Chicago; June 5, reduced station price 1 cent.

Magnolia Petroleum Co. May 26 reduced gasoline tank wagon price 1 cent and station price 2 cents in San Antonio; May 31, advanced tank wagon and station prices 1 cent. May 31, advanced gasoline tank wagon and station prices one-half cent in Little Rock.

Standard Oil Co. of New Jersey May 30 reduced gasoline station price one-half cent in Parkersburg. May 31, advanced normal gasoline tank wagon and station prices one-half cent throughout its territory. (This left station price unchanged in Roanoke, Richmond, Parkersburg, Hickory, Raleigh and Spartanburg. May 12, advanced gasoline tank wagon and station prices one-half cent in Charleston, S. C.; May 18, advanced them one-half cent further; May 31, advanced them one-half cent further (as part of the general advance.)

Standard Oil Co. of Nebraska May 28 advanced kerosene tank wagon price 2.1 cents in McCook and one-half cent in Norfolk and North Platte.

Standard Oil Co. of Louisiana May 28 advanced gasoline station price 1 cent in New Orleans. May 29, reduced gasoline station price one-half cent in Knoxville.

Standard Oil Co. of California May 29 advanced gasoline tank wagon and station prices one-half cent in Fresno.

Atlantic Refining Co. May 24 advanced gasoline tank wagon and station prices 1 cent in Providence. May 24, advanced kerosene tank wagon price 1¼ cents in Springfield, 1 cent in Hartford, one-half cent in Providence.

CRUDE OIL PRICE CHANGES

Effective June 1, the Texas Co. changed its classification of Texas Panhandle crude from counties to "Panhandle sweet" and "Panhandle sour." Panhandle sweet crude is posted the same as present Gray County prices and Panhandle sour is posted the same as present Carson and Hutchinson County prices. This is a cut for some Gray County crudes but an advance for some Carson and Hutchinson County crudes.

CANADIAN OIL RATE CASE

EDMONTON, Alberta, June 2.—The Dominion Railway Commission, with Dr. S. J. McLean, assistant commissioner, presiding, has been conducting hearings in western Canada in connection with the application of the Canadian railways for increased freight rates on crude oil imported from the United States into the Canadian West.

The itinerary of the board includes hearings at Winnipeg, Regina, Edmonton, Vancouver and Calgary. The application contemplates a general increase in crude oil rates. The existing rate of 57½ cents from the Mid-Continent Field to Calgary would be raised to 62 cents with other increases in proportion.

The application has been opposed jointly by the provincial governments of Manitoba, Saskatchewan and Alberta and is being strongly opposed by independent refining companies throughout the Canadian West.

Interesting Features of Plants in East Texas

(Continued from Page 13)

absorber was replaced with one having a capacity of 12,000,000 feet per day, designed by Petroleum Engineering Co., and built by Wyatt Sheet Metal & Boiler Works of Houston. Additions were made to the plant piping to provide connections to additional gathering lines and compressors. There were no other additions to the original plant equipment of the type designed by Engineering Research and Equipment Co. Earl Clover, general superintendent of Excelsior Refining Co., kept the original plant in efficient operation during the period of construction and co-ordinated the activities of his organization with those of the new construction. He will continue in charge of field operations with Parade Gasoline Co. John B. Atkins will continue as president of the expanded company.

L. J. Dales, superintendent, consulting with foreman "Papa" Crockett (right) regarding location of Hercules Gasoline Co.'s pipe connection

Tall Pines Plant

Col. R. H. Gordon and associates of Tyler, Tex., organized Tall Pines Natural Gasoline Corp. to build a plant on the Luling Oil & Gas Co.-Brightwell lease, in the Winn Survey of Rusk County. This compression type plant was built under the personal direction of Ray Ranne, general superintendent, using materials and equipment from a plant dismantled in Oklahoma. The capacity of the plant, approximately 2,000,000 feet of gas per day, is drawn from a gathering area with a radius of a mile from the plant site. An unusual feature of the construction was that of the compressor building which houses four Watts-Miller compressors. The frame of the building was fabricated with oxy-acetylene welding of salvaged pipe with roof trusses designed to permit swinging removable engine parts with a chain hoist. This plant, located on the Sexton City-Pistol Hill road, presents a very neat appearance.

O. J. Dykes, president and general manager, Lisbon Gasoline Company

The Chief Refining Co., whose general manager is L. B. Haberle, is operating a refinery at the east edge of the city of Gladewater. This company built a compression type gasoline plant in the refinery yard to handle approximately 2,000,000 feet of gas per day from producing wells within the city limits of Gladewater. The gathering system of this plant is unique in the natural gasoline business in that the lines are laid in parkways and under city streets like the lines of a public utility and were required to meet the strict specifications and inspection of city authorities for safety of construction as well as the inspection and engineering requirements of the refining company. The complete gathering system with well connections was engineered and built under the supervision of B. J. (Billy) Moreau of Chief Refining, by Dye and Hearrell, engineers and contractors of Gladewater, at that time a partnership of John Dye and Jack Hearrell. All of the pipe was Aircowelded and on completion the lines were thoroughly tested and approved by both the city and refining company authorities. Officers of Chief Refining Co. are: H. C. Haberle, president; Mrs. L. B. Haberle, vice president; L. B. Haberle, secretary and treasurer and general manager; and B. J. Moreau, general superintendent of natural gasoline plants.

Foreman Barney Dickson, supervising welding of line for Parade Gasoline Co.

There was an effective application of advanced natural gasoline engineering in the construction of plants in the East Texas Field during the past year. Keen competition of marketers of materials and equipment brought about careful examination for quality, economy of use and installation, and serviceability in operation. The design of the plants and their gathering systems gave consideration to the operating experience of older plants in the field and was affected by the necessity for economy in construction and operation, the demand for maximum yield of a product which would meet the close specifications of a competitive market, and the variables of East Texas production operations, partly resulting from proration schedules. Improvements in construction methods included use of Aircowelding on all of the new gathering systems completed during the year on a large part of the pipe work in the plants, and its exclusive use on the large diameter pipe in these gathering systems. Two of the plants were of the vapor rectification type, considered particularly adaptable to East Texas operations. Some improvement was made during the year in the co-operation of producers on flow schedules, the most difficult problem in gasoline plant operation in the East Texas Field.

Conditions in the Eastern Market Somewhat Mixed

(Continued from Page 27)

burner service. Complaints have been made to Washington by oil companies and also the American Oil Burner Association.

In Baltimore, which is one of the places where the gas competition as outlined above has become an important factor, oil companies have changed their oil contracts and the top price is only 1 cent above the base price. The oil companies in their efforts to close contracts with householders and industrial users are also feeling the competition of the coal industry where burners have been improved and various types of price concessions are offered.

Prices

A representative set of prices for the New York Harbor in tank car and small barges on U. S. Motor gasoline is: Under 60 octane, 6¼ cents; 60-64.9 octane, 6½ cents; 65 and above octane, 6¾ cents and 7 cents for branded gasoline (regular grade containing tetraethyl lead). Some companies are asking one-quarter cent more than these prices and these quotations were also shaded in a few sales made the last few days of May. Spot trading does not appear active in this market regardless of price.

Among the distillates several companies are now quoting 5 cents for Nos. 2, 3 and 4 furnace oil and Diesel oil in tank car lots. However, in spot sales reported last week, No. 4 furnace oil sold as low as 4½ cents and the other products named were available from several sources at 4¾ cents. The prevailing quotations on No. 1 furnace oil, range oil and kerosene range was from 5½ to 6 cents with spot sales light. Bunker C fuel is moving in fair volume at $1.30 per barrel and prices on gas oil range from 4½ to 4¾ cents. It is said the arrival of the fleet of the U. S. Navy in Atlantic waters will increase the demand from East Coast refiners for bunker fuels over the next few months.

Steam refined and bright stock prices for Pennsylvania Grade and Mid-Continent have been lowered by several sellers in this territory. The reductions, however, in most cases have been made by companies which were quoting the top prices previously so there has been little change in the price ranges. Paraffin base neutral oils continue strong.

The larger refiners have not changed their quotations on refined wax for domestic and export movement. Crude scale wax is being sold over a wide price range with a low of 3⅜ cents reported.

CONOCO INSPECTION TOUR

Officials of the Continental Oil Co. visited San Antonio on their annual inspection tour of the company's properties. The group, headed by D. J. Moran, president, is making an 8,000-mile trip through 16 states and traveling in a 30-passenger bus. In addition to Mr. Moran, the party included George D. Olds, Jr., assistant to the president, New York; R. E. Collins, vice president, Los Angeles; E. J. Nicklos, vice president; Walter Miller, vice president; H. K. V. Tompkins, manager of exploration department; E. S. Karstedt, vice president; T. D. Harris, superintendent of transportation; P. J. Ryan, assistant general sales manager; E. O. Bennett, chief engineer; J. G. Dyer, manager pipe line department; Wesley Nunn, advertising manager; G. T. Bodman, general auditor, and W. H. Zwick, legal department, all of Ponca City, Okla.; James Tatum, geologist, Monterrey, Mexico, and Knox Tyson, geologist, San Antonio, Tex.

W. R. Boyd, Jr., to Receive Doctor of Law Degree

William R. Boyd, Jr., executive vice president of the American Petroleum Institute, will receive the degree Doctor of Laws from St. Bonaventure College, St. Bonaventure, N. Y., June 12.

The degree will be awarded at the dedication of the college's new Arts and Science Hall to Joseph de La Roche d'Aillon, who is credited with the discovery of petroleum in this country, and whose name the building will bear.

W. R. BOYD JR.

"In an effort to link the past with the present," President Thomas Plassman, of St. Bonaventure, wrote Mr. Boyd, "the faculty has voted to confer honors on outstanding men of the oil industry. Naturally we turn our eyes to the American Petroleum Institute, which, in our opinion, is the unifying association, or the intellectual clearing house, of the whole industry."

Father Plassman, in inviting Mr. Boyd to represent the Institute at the dedication ceremonies, reminded him of their mutual friendship with the late Robert Welch, the original director of the oil industry's trade association.

Elements in Balancing Supply and Demand

(Continued from Page 18)

ties and potentials have a dynamic quality that tends to affect markets if the barriers interposed against their effects are not of the strongest. The problem of equilibrium, therefore, involves not merely the attainment of a volumetric balance but the isolation and gradual eliminations of the pressures that tend to be upsetting even after the appearance of equilibrium has been attained.

Thus it may be said that progress toward equilibrium in the petroleum industry requires a clear perception that supply must not exceed the demands of ultimate consumers; and, in addition, that those sources of excess pressure on the supply side, such as extra capacity, surplus potentials, unneeded inventories, and uneconomic drilling practices, be gradually eliminated. And in working toward these ends, it will be well to leave sufficient flexibility in the economic structure to permit facility of expansion when the time arrives when stimulus should be substituted for restraint.

M. D. MUNSIE DIES

MALDEN, Mass., June 2.—Melville D. Munsie, 56, of Malden, president and treasurer of the Pioneer Petroleum Co. of Boston and Tulsa, died this week at the Malden Hospital.

NEWS FOR PETROLEUM REFINERS

Federal Gasoline Taxes Show $10,000,000 Increase

Federal gasoline taxes cost the motoring public more than $10,000,000 more in the four months of 1934 than in the first quarter of 1933. Collections were $53,760,640.34 against $38,386,171.96 in the corresponding period of 1933.

Collections for April amounted to $9,666,226.15, an increase of 21.1 per cent over the $7,982,100.20 collections of April, 1933, according to reports of the U. S. Bureau of Internal Revenue received by the American Petroleum Industries Committee. Collections in March, 1934, were $11,685,494.34.

April collections of Federal taxes on lubricating oils showed a gain of 33.9 per cent over those of April, 1933, but a loss of about $300,000 as compared with March, 1934.

Following is a table of taxes paid to the Federal Government by motorists in April:

Source of revenue—	Amount collected— 1934	1933
Lub oils	$1,670,789.78	$1,246,950.62
Gasoline	9,666,226.15	7,982,100.20
Tires	940,514.63	1,169,031.12
Inner tubes	232,815.19	241,132.39
Auto'obile trucks	401,207.45	150,996.22
Automobiles and motorcycles ..	2,901,452.94	1,714,689.22
Auto parts and accessories ...	519,136.47	308,984.08

DUBBS GAS IN ZEPPELIN

CHICAGO, June 2.—Dubbs cracked gases, and not gasoline or benzol, are the fuels now used for the engines of the giant airship, Graf Zeppelin, according to dispatches from Germany.

The Graf is in passenger and mail service, flying on a regular schedule from Friedrichshafen, Germany, and Pernambuco, Brazil.

The gas used is a mixture of propane and butane, with sufficient hydrogen added to give it the proper density.

The propane-butane gas is a by-product of the stabilization of cracked gasoline from the Dubbs cracking unit in the plant of the Deutsche Erdoel Raffinerie at Misburg, near Hamburg.

The gas is bottled at the refinery in steel containers and shipped to the terminals at Friedrichshafen and Pernambuco.

NEED NOT REGISTER AGAIN

In connection with the requirement of registration and bonding of producers of gasoline and lubricating oil, under Section 603 of the Revenue Act of 1934, it has been decided not to require new registrations of those companies already registered under the 1932 act as manufacturers. The application for registration of companies not previously registered will be made on form 637-A. Discretion will be given to the collectors in the matter of fixing the amount of the bond required, with an appeal to Washington.

SHELL GETS CONTRACT

ST. LOUIS, Mo., June 4.—The Indiana State Highway Department has signed a contract with Shell Petroleum Corp. for its entire gasoline and kerosene requirements for a period of one year, starting June 1. It is estimated that this contract will involve a total of 3,000,000 gallons.

NEW ONTARIO REFINERY

HAMILTON, Ontario, June 2.—The recently completed refining plant of Burlington Refineries, Ltd., near here, has commenced operations, with about 50 men employed. S. J. Sackett of Chicago is president, and George F. Gibson general manager of the company.

50-CITY GASOLINE PRICE FOR JUNE 1 SHOWS RISE

The average service station price of regular-grade gasoline, exclusive of taxes, in 50 representative cities throughout the United States on June 1, 1934, was 14.01 cents per gallon, as compared with 13.66 cents on May 1, an advance of .35 cent. It compares with 13.55 cents on April 1, a rise of .46 cent above the April 1 price.

The 50-city price on June 1, 1933, was 10.82 cents. The 1934 composite price thus represents a gain of 3.19 cents over that of a year ago. The 10.82 cents average for gasoline on June 1, 1933, was the lowest price touched since the 50-city record was begun 10 years ago. The highest June 1 price was that of 1926, when 22.13 cents was the average paid.

NEW WAINWRIGHT REFINERY

WAINWRIGHT, Alberta, June 2.—Gold Standards Oils, Ltd., has commenced refining operations at Wainwright. The plant has a capacity of between 450 and 600 bbls., which can be increased to 1,500 bbls. and is running oil from a number of wells in the Wainwright Field which the company has reconditioned. Crude oil is also being secured from Montana and Wyoming. B. V. Hole is in charge of the plant with B. F. Beaubier as assistant manager and I. M. Hole, foreman. M. R. Cowell is managing director. The plant is producing a full line of gasoline, kerosene, distillates and lubricants. A bulk station and service stations at Edmonton will handle distribution in that city.

NEW MINERAL WELLS PLANT

The Graford Refining Co., composed of J. Jones and others, has erected a 50-bbl. refinery on the Mineral Wells & Northwestern Railroad near Mineral Wells, Tex., and is processing the 40 gravity crude being trucked from the Dalton Pool 5 miles southwest of the plant.

ASPHALT FOR RUNWAYS

Black and white striped asphalt runways, an innovation of great importance to aviators, are now being constructed at Kelly Field, San Antonio, Tex.

Striped runways give good visibility night and day, and, because of perspective, the pilot can estimate his distance above the field, which is impossible with all black or all white surfaces. An additional feature of this new type of runway is that it has a nonskid surface.

The striped effect was made possible by the use of Colas, a black-colored emulsified asphalt, in the construction of all wearing surfaces on a new runway, the old warming line, taxiways and roadways at the field. As this Shell product will thoroughly penetrate a compacted roadway surface, uniformly coating each particle with a thin film of asphalt, it was possible to leave it uncovered for the black stripes without danger of the surface becoming soft or sticky, and to cover it immediately after application with a light layer of pea gravel thoroughly rolled in, for the white stripes.

The striped effect idea was developed by Air Corps officers in co-operation with Shell Petroleum Corp.'s asphalt sales department representatives, who helped supervise the construction. The area of runways and taxiways covered was 150,000 square yards.

Revise Rules in Fixing Fuel Price Differentials

Administrator Ickes has approved the following revision of fuel oil price differentials for Region 1:

"Whereas, the resolution under Article 5, Rule 3, Paragraph 7, relating to conditions under which consumers may secure range oil, Diesel fuel and fuel oils, provides:

"'That regional marketing committees may by majority vote and approval of the Planning and Coordination Committee and the petroleum administrator at Washington omit or change the established top prices over the posted prices on any product mentioned herein by any of the above described methods of delivery in any area within the region where competitive conditions with fuels other than petroleum warrant.'

"Now, therefore, the marketing committee for Region No. 1 does hereby recommend the following exceptions to said resolution, namely: the insertion of the following in place of Clause (c):

"'(c) That no guarantee of a fixed or top price over a period be made except

"'1. In the metropolitan area of Baltimore, Md., in order to meet the severe competition of other fuel, range oils, Diesel fuel and domestic fuel oils (Nos. 1, 2, 3 and 4 as defined by commercial standards in effect at the time contract is made) may be sold with a top price not lower than 1 cent more than the posted price without discount on the date contract is made.

"'2. Outside the metropolitan area of Baltimore and within a radius of 40 miles from the center of the city of Baltimore but only within the borders of the State of Maryland in order to meet the severe competition of other fuels, range oil, Diesel fuel and domestic fuel oils (Nos. 1, 2, 3 and 4 as defined by commercial standards in effect at the time contract is made) may be sold with a top price not lower than 1½ cents more than the posted price without a discount on the date contract is made.

"'3. Industrial fuel oils (Nos. 5 and 6 as defined by commercial standards in effect at the time contract is made) may be sold with a top price not lower than 20 per cent more than the posted price without discount on the date contract is made.'"

STATE MARKET CONTROL?

MADISON, Wis., June 4.—R. M. Orchard, attorney of the Wisconsin state department of markets and agriculture, announced the possibility that the State will assume authority to regulate the retail oil business, when he addressed over 200 members of the Wisconsin Petroleum Association in annual convention here. He said that state regulation will come if the industry does not at once correct its own current problems, caused by ruinous price cutting and violations of the Federal NRA code.

CO-OPERATIVE REFINERY

REGINA, Saskatchewan, June 2.—Saskatchewan farm co-operative interests which recently secured a provincial charter for Consumers Refinery, Ltd., are reported planning to construct and operate a small refinery to supply gasoline and fuel oil to farm organizations in the province.

NEW UNIVERSAL OIL OFFICE

CHICAGO, June 2.—Universal Oil Products Co., owner of the Dubbs cracking process, has moved its New York office to 50 West Fiftieth Street.

PIPE LINE CONSIDERED

REGINA, SASKATCHEWAN, June 2.—At a recent hearing on crude oil freight rates before the board of railway commissioners, R. Winfield, traffic manager of the British American Oil Co., announced that if the 47½-cent rate was increased his company would build a pipe line to supply its new Moose Jaw plant. This plant, taken over some months ago from Sterling Refineries, Ltd., is being materially extended and brought up to the standard of the British American refining plants in eastern Canada. The company plans a jointly owned line with Imperial Oil, Ltd., to the international boundary and to lay its own line from that point to Moose Jaw.

DEFINITION OF NAPHTHA

A number of protests have been received by the bureau on the ruling regarding the taxibility of engine distillate. It now appears that under the 1932 act, the bureau is taxing all liquids which come within the A.S.T.M. definition of naphtha. This definition is as follows:

A generic applied to refined, partly refined or unrefined petroleum products and liquid products of natural gas, not less than 10 per cent of which distills below 347° F. (175° C.) and not less than 95 per cent of which distills below 464° F. (240° C.) when subjected to distillation in accordance with the standard method of tests for distillation of gasoline, naphtha, kerosene and similar petroleum products (A.S.T.M. designation: D-86) of the American Society for Testing Materials.

Note: The naphthas used for specific purposes, such as cleaning, manufacture of rubber, manufacture of paints and varnishes, etc., are made to conform to specifications which may require products of considerably greater volatility than that set by the limits of this generic definition.

This distillation range would apparently include a great many of the fuels used in tractors and it is understood the American Petroleum Industries Committee is considering a test case to have this ruling reversed.

PROPOSE HYDROGENATION

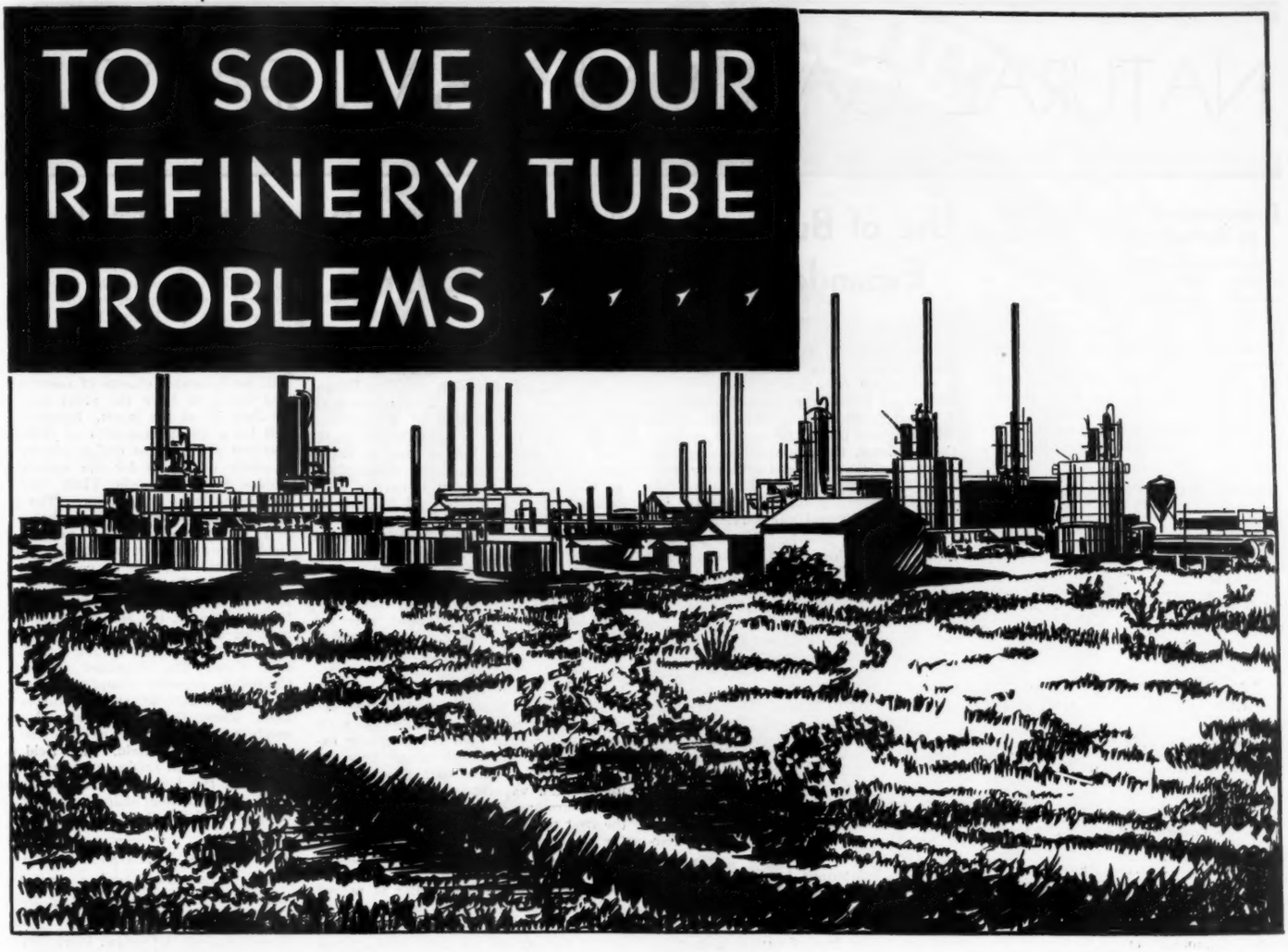
FERNIE, British Columbia, June 2.—The possibilities of producing motor fuel by hydrogenation of western Canadian coals was discussed recently in a letter by Dr. H. M. Tory, president of the National Research Institute, to Hon. H. H. Stevens, Federal minister of trade and commerce. Doctor Tory writes in part:

"I have had a number of letters lately from the west suggesting the possibility of a hydrogenation plant being put in for the purpose of making oil and motor fuels from coal. You will recall that they have got so far in Great Britain that they have agreed on subsidizing the industry by an 8-cent tariff for 10 years or a 16-cent tariff for five years.

TRACTOR FUEL SUBSTITUTE

REGINA, Saskatchewan, June 2.—A. E. Hardy, professor of agricultural engineering at the University of Saskatchewan, states that if a threatened advance of 5 cents a gallon in gasoline prices materializes, plans may be worked out for utilizing a blend of gasoline and alcohol manufactured from low grade wheat as tractor fuel. The university is also investigating the feasibility of using compressed gas from the new natural gas field at Lloydminster as tractor fuel in areas convenient to a projected pipe line from Lloydminster to Saskatoon.

TO SOLVE YOUR REFINERY TUBE PROBLEMS



THE success of Timken refinery tubes is based on exact suitability of the alloy steel from which they are made to the purposes for which they are intended.

That is why the manufacture of Timken tubes is not restricted to the steels heretofore used, but includes all of the standard formulas together with special analyses developed by Timken metallurgists.

As produced by Timken manufacturing processes and quality control methods, old refinery tube alloys develop new possibilities, while the new steels reveal surprising capacities in their particular spheres.

It will pay you to put your refinery tube problems up to Timken metallurgists.

THE TIMKEN STEEL AND TUBE COMPANY, CANTON, OHIO

District Offices or Representation in the following cities: Detroit Chicago New York Los Angeles Boston Philadelphia Houston Buffalo Rochester Syracuse Tulsa Cleveland Erie *World's Largest Producer of Electric Furnace Steel*

TIMKEN ALLOY STEELS

ELECTRIC FURNACE AND OPEN HEARTH - ALL STANDARD AND SPECIAL ANALYSES

NATURAL GASOLINE MANUFACTURE

Pronounced Seasonal Drop in Refinery Use of Natural

In California the daily average natural gasoline production during April remained at approximately the same level as the previous month, amounting to 31,283 bbls. as compared to 31,204 bbls., according to the California office of the Bureau of Mines. Daily average refinery utilization decreased substantially, amounting to 27,269 bbls., or 3,726 bbls. under March. Stocks increased 1,300 bbls. daily, or a total of 39,000 bbls., and at the end of the month were 2,473,759 bbls.

NATURAL GASOLINE PLANT OPERATIONS

Field—	Gas treated (M.C.F.)	Natural gasoline produced (gallons)
San Joaquin Valley:		
Elk Hills	84,179	141,918
Kettleman Hills	8,510,368	11,120,831
Midway-Sunset	1,330,202	2,580,640
Mountain View	44,304	56,554
Miscellaneous	406,565	403,117
Coastal region:		
Elwood	221,117	390,264
Rincon	80,725	106,806
Santa Maria	164,564	438,156
Ventura Avenue	2,985,979	3,343,884
Miscellaneous	200,119	239,463
Los Angeles Basin:		
Coyote	444,129	820,826
Dominguez	766,616	1,500,853
Huntington Beach	2,380,809	3,034,122
Inglewood	133,908	144,479
Long Beach	2,080,418	6,433,770
Playa Del Rey	201,230	591,873
Richfield	499,100	559,721
Rosecrans	494,269	589,218
Santa Fe Springs	3,208,311	5,102,146
Seal Beach	605,138	777,863
Torrance	101,744	220,711
Miscellaneous	239,391	814,408
Totals (all fields)	25,183,185	39,416,642

DISTRIBUTION (gallons)

Stocks beginning of months	3,388,508	.....
Production during month	39,416,642	.....
Delivered to refineries	.....	35,986,375
Delivered to jobbers, brokers or blenders	.....	3,163,266
Blended at plants for production of motor fuel	.....	2,515
Losses	.....	95,091
Stocks end of month	.....	3,557,903
Total	42,805,150	42,805,150
Liquefied petroleum gas production	701,962	.....
Motor fuel produced	5,127	.....

SUPPLY AND DEMAND
(Barrels)

	Natural gasoline inc. liquefied petroleum gas April	Natural gasoline inc. liquefied petroleum gas March
Supply		
Total production	31,840	31,752
Stock transfer (deliveries) receipts—net	(276)	(358)
Net total	31,564	31,394
Deduct refinery requirements:		
Run to stills	3,244	3,823
Blended	24,025	27,172
Total	27,269	30,995
Add refined output:		
Natural gasoline.—net	229	125
Net refined production	229	.....
Net current supply	4,524	524
Demand		
Domestic demand including bunkers	805	594
Shipments to Alaska and Hawaii	6	3
Rail and truck shipments to U. S. points outside Pacific Coast territory	4	1
Demand in domestic market area	815	598
Shipments: Pacific foreign inc. Canal Zone	436	152
Total market demand	1,251	750
Losses (gains) unaccounted for—net	1,973	711
Total current demand	3,224	1,461
Surplus or (deficit)	1,300	(937)

Use of Butane as Rail Car Fuel Will Be Expanded on Southern Pacific Lines

By L. P. STOCKMAN

The Southern Pacific Railroad Co., which is pioneering the use of butane as a rail motor fuel, has conducted its development tests on a limited scale over a period of about two years and during this time has proved to its own satisfaction, at least, that butane is a more desirable fuel than either distillate or gasoline. It has accordingly formulated an expansion program for extending the use of this fuel in rail car service.

The company now has, in revenue passenger service between Los Angeles and Santa Barbara and between Los Angeles and Oxnard, two gas-electric rail motor cars, in which the internal combustion engines have been equipped to burn butane instead of distillate and gasoline. The converted cars were constructed by the J. G. Brill Co. and are powered by two Model 300 Hall-Scott engines direct connected to Model 181-A Westinghouse Electric generators. The cars are of all-steel construction, traction motors on each axle, weigh 179,000 pounds on rail, are 72 feet long and have a seating capacity for 54 passengers. They handle a steel baggage car on each run, except that a standard Pullman sleeper is added on the return from Santa Barbara to Los Angeles.

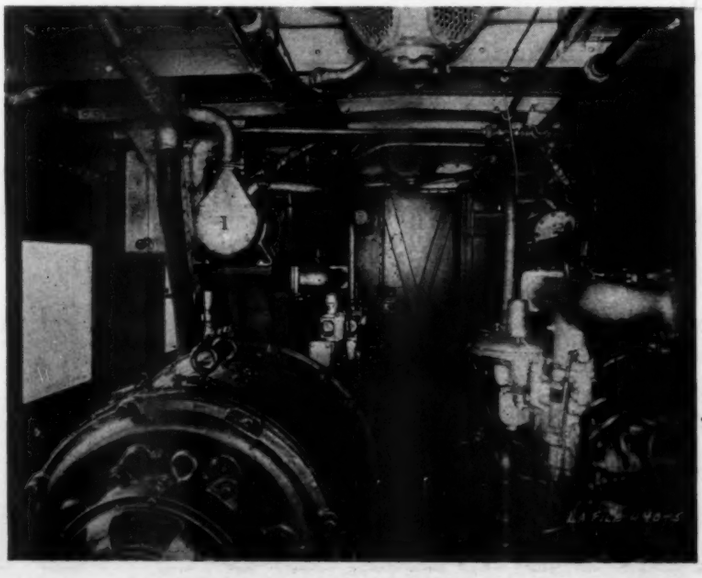
The use of butane has resulted in increased engine power without detonation; eliminates obnoxious exhaust fumes as the exhaust from the engines is clear and practically free of carbon monoxide; affords more complete combustion with no carbon deposits from the fuel; freedom from crankcase dilution; increases the mileage of lubricating oil; reduces maintenance costs and increases the mileage between shopping periods; has a lower engine operating temperature; permits easier starting as no time is required for warming up; increases the service of spark plugs, exhaust manifolds and oil filters and affords freedom of the lubricating system from carbon and sludge which results in longer service to moving parts of the engine.

The fuel being used is purchased from the Butane Sales Co. This mixture of hydrocarbons, consisting of 4 per cent propane, 27 per cent iso-butane and 69 per cent normal butane has a vapor pressure of 55 pounds per square inch at 105° F. and while it is carried as a compressed liquid, it is used for fuel as a gas. In order to carry the fuel and to effect a ready transfer from the liquid to the vapor state, it was necessary to develop special equipment and consequently when the cars were converted the original distillate tanks, fuel system and carburetor equipment were removed. Two new 600-gallon tanks and a fuel distributing system constructed for 175 pounds working pressure were accordingly installed.

The pistons were changed in the engines to increase the compression ratio from 3.62 : 1 to 5.96 : 1 and new exhaust valves and spark plugs were installed. Mixing valves with pressure regulators and vaporizers are used instead of carburetors. The fuel is forced up to the first pressure regulator and thence to the vaporizer by its own pressure. In cold weather, when the vapor pressure is not sufficiently high to raise the fuel, steam from the heating boiler is passed through coils under the tanks.

Fuel consumption with butane approximates 1.6 gallons per mile as compared with 1.4 gallons with distillate but this is more than offset by the increased power which is made available for heavier loads and in meeting grades and in increasing speed. Savings of .145 cent and .347 cent per mile have been effected for running and shop repairs. The engines, operating on distillate, developed 300 horsepower but since using butane they have developed 400 horsepower each or a total of 800 as compared with 600

(Continued on Page 43)



Interior of the engine room illustrating the butane equipment, with the fuel connections on both power units

Lomita to Build Plant in Mountain View Field

The Lomita Gasoline Co. has completed final plans for the erection of a natural gasoline plant in the Mountain View Field of Kern County and construction work is expected to get under way within the next 15 days. J. A. Campbell, chief engineer of the Lomita, will be in active charge of construction and hopes to have the plant operating by July 15 at the latest. Specifications call for a normal capacity of 10,000,000 feet per day and the design will be particularly adaptable for the natural gas produced at Mountain View, which is rich in propane and butane. The plant will be located on the Huckebah property in the north central part of the field. Gas contracts will be handled by George Arto, who was connected with the Richfield Oil Co. for several years. There are two natural gasoline plants in this field at present, the Mohawk having dismantled its Playa Del Rey unit a few months ago and reassembling it at Mountain View. The Standard Oil Co. of California recently completed construction of a relatively small plant in the field. These three plants should prove ample to handle the entire natural gas production of the field. This field is a notoriously small producer of gas. In addition to the low gas-oil ratio, curtailment of production will retard rapid development of the field.

NEW SHELL AND UNITED PLANTS

The United Gas Co. has started the construction of a booster station about 8 miles northeast of the Iowa Field at Woodlawn in Jefferson Davis Parish, which will handle approximately 11,000,000 cubic feet of gas daily from the Shell Petroleum Corp.'s plant which will be constructed in the Iowa Field. The construction of Shell's natural gasoline plant will start within the next few days. Both the booster station and Shell's plant are expected to be completed within the next three months. Shell's plant will be constructed by the Stearns Rogers Manufacturing Co. and will have a capacity of approximately 15,000,000 cubic feet of gas daily and a daily output of about 15,000 gallons of gasoline.

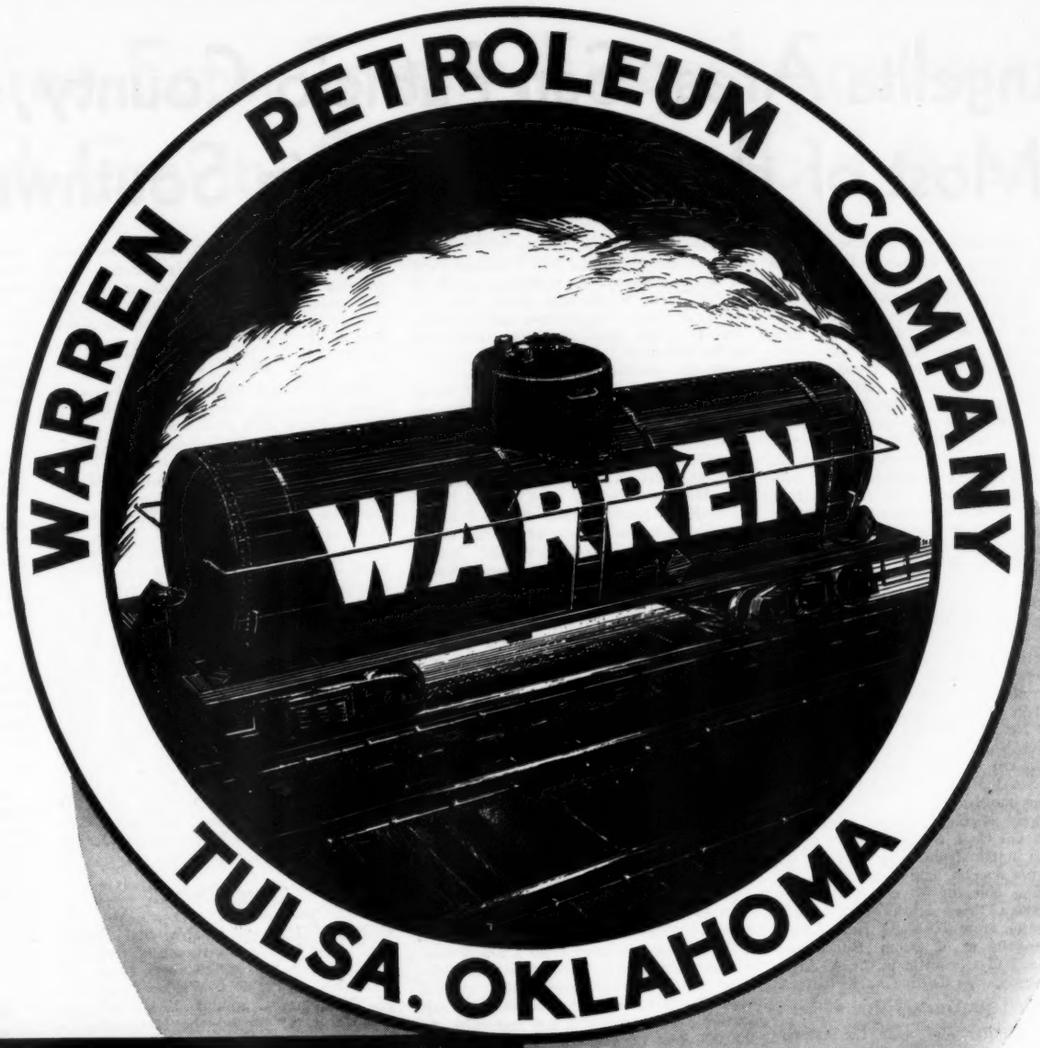
Construction details provide for enlarging the plant as additional gas becomes available. This is the first Louisiana Gulf Coast gasoline plant.

FOUND TIME TO MOVE

After one month as secretary of the Natural Gasoline Association of America, William Lowe found time to move his family from Cleveland to Tulsa. In that one month Mr. Lowe had to hurriedly gather up the loose ends left to be done in arranging for the association's four-day annual convention early in May, aid in outlining a plan for giving the natural gasoline industry more direct representation at Washington, compile statistics for a plan of regulating production and aid in presenting the case of natural gasoline before Administrator Ickes and the P. and C. committee in Washington.

ABSORPTION PLANT STARTED

CALGARY, Alberta, June 2.—Work has been started on the foundations of the new gasoline absorption plant of Gas & Oil Products, Ltd., at the Mercury camp in the South Turner Valley Field. A portion of the plant has been shipped from Texas.



JUST
NATURAL
GASOLINE

MANUFACTURERS, EXPORTERS, AND MARKETERS OF "JUST NATURAL GASOLINE"

Angelita Area, San Patricio County, Is Holding Most of Present Interest in Southwest Texas

SAN ANTONIO, Tex., June 4.—San Patricio County held much interest in the Southwest Texas area during the past week, with the second well in the newly discovered Angelita area ready to pronounce its verdict, along with new developments in the Sinton area.

Circle W Oil Co.'s No. 1 Welder, about 1,500 feet northwest of the discovery well, had sand from 5,358-78 feet and on a 15-minute drill stem test showed 6 fourbles of oil with 2 fourbles of salt water with 600 pounds pressure. Late in the week it had set casing and will probably drill plugs during the first part of the week. A Schlumberger test of the sand from 5,375-78 feet was made and showed salt water. The discovery well for the area, Atkins & O'Neil and Continental Oil Co.'s No. 1 Welder, completed less than a month ago, came in flowing at the rate of 175 bbls. per day at 5,382 feet.

In northern San Patricio County and in the new discovered Sinton area, one test had already started and two more will spud in within a few days. Plymouth Oil Co.'s No. 2-A Welder, 1,320 feet due east of its No. 1-A, was drilling at 150 feet. Heep Oil Co. was moving in material for No. 1 R. H. Welder and Petrol Corp. was moving in for No. 1 R. H. Welder west of the Plymouth producer. Plymouth Oil Co.'s No. 1 Welder, about 1½ miles north from Sinton, came in about three weeks ago flowing at the rate of 5½ bbls. of 50 gravity oil per hour through three-eighths inch choke. It had sand from 5,430-34 feet. About 3 miles southwest of Odom, Bunte and others' No. 1 C. C. Smith, in the A. Armstrong Survey, was drilling at 4,475 feet.

Bee County

In Bee County and near the Caeser area where Caeser Oil Co. recently completed No. 1 Pullin for a big gasser, Caeser Oil Co.'s No. 2 R. E. Miller in the F. Lewis Survey was drilling below 1,625 feet. Houston Oil Co.'s No. 1 Miller, west of No. 1 Pullin discovery, was drilling at 2,513 feet. Much interest is being turned to this area as the Caeser discovery has started showing some 35.2 gravity oil and it is the belief of some that an oil field will be opened in the area. A separator has been erected on the Pullin well.

Houston Oil Co.'s No. 1-B Neihaus, south of the North Pettus Field, topped the Pettus sand at 3,644 feet and came in flowing at the rate of 25 bbls. oil per hour through one-half inch choke with 250 pounds pressure on tubing and 450 pounds on casing. The first day the well made 500 bbls. About 1½ miles from Tuleta, Dirks Brothers' No. 1 Skinner-Harrison was coring for the Pettus sand at 3,825 feet. Heep Oil Co.'s No. 1 J. C. Wood, about 5 miles southwest of Beeville, bottomed hole at 4,722 feet and has been plugged back to 3,934 feet where it will whipstock and core to the gas sand encountered from 4,200-21 feet and complete as a gas well. Phillips Petroleum Co.'s No. 1 Morgan, in the Eyles Survey, ran a Schlumberger test but did not get below 4,900 feet. It is reported to have recorded three showings between 4,200 and 4,600 feet. Total depth is now 6,090 feet and at last report operators were preparing to drill to the contract depth of 6,500 feet.

Starr County

In the Las Cuevitas area of Starr County, Sun Oil Co.'s No. 1-E Guerra & Son was drilling at 1,015 feet. This test is north of production and in the extreme northwest corner of the county. Sun's No. 6-C Guerra, about a mile south of production, was coring at 1,914 feet. It is reported Sun Oil Co. is making preparations for a 30-day test of its nine producers in the Las Cuevitas Pool. It is also reported the company will build 55,000 bbls. of storage space near the center of its producing area and will construct 4-inch gathering line from the wells and run the 30-day test to determine the possibilities of the area.

McDonald and Campbell's No. 1 C. C. Bowman, about 8 miles north of the Jeffries Lambeth area in Starr County, was shut down for water at 3,215 feet. McDonald's No. 1 E. A. Peffley was coring at 2,385 feet. About 1¼ miles south of the Jeffries Lambeth area, E. L. Younkins' No. 1 Starr County Cattle Co., has been abandoned as dry with total depth of 2,635 feet. Goodwin-Yantis' No. 5 Anna K. Bass in Block 10, Survey No. 3, Porcion 87, has been completed for 10,000,000 feet of gas at 689 feet.

In south-central Starr County and about 2,000 feet northwest of Jeffries Lambeth's No. 1 gasser, Weekley & McGinley's No. 1 Starr County has been completed for 25,000,000 feet of gas daily from sand at 2,458-63 feet. Total depth is 2,474 feet.

Webb County

East of the city of Bruni and in Webb County, United Production Co.'s No. 1 Bruni, held interest during the week when it discovered a new deep sand at 3,410-17 feet and tested eight joints of 42 gravity oil and six joints of mud. The 7-inch casing was cemented at 3,406 feet and late in the week it was preparing to drill plugs. This is the deepest sand yet discovered in the area. It had cap from 2,284-86 feet, gas sand from 2,266-97 feet, estimated good for 15,000,000 feet daily, sand from 2,547-55 feet which showed eight joints of oil and two joints of salt water, sand at 2,795-2,820 feet with 3,000,000 feet of gas, and gas sand from 2,940-58 feet. J. W. Edwards' No. 1 M. Vela, in Block 9, Survey 267, has been abandoned as dry with total depth of 2,613 feet.

Goliad County

In Goliad County and about 2,500 feet east of the north Pettus Field, H. H. Weinert's No. 1 Grady Smith in the B.&B. Survey No. 25, has been completed for 232 bbls. daily through one-quarter inch choke on tubing. It had 210 pounds pressure on tubing and 650 pounds on casing. Total depth is 3,662 feet.

Duval County

Duval County marked up eight completions during the week, one of which was in the Eagle Hill Pool and seven in the Government Wells Field. In the Eagle Hill Pool, S. R. C. Oil Co.'s No. 3-B J. R. Foster was completed for 25,000,000 feet of gas with a spray of oil at 1,486 feet. In the Government Wells Field, Cox and Hamon's No. 14 State bottomed hole at 2,237 feet and made 100 bbls. Magnolia Petroleum Co.'s No. 2 Duval County Ranch on the west edge of the field, drilled to a total depth of 2,252 feet and has been completed for 20 bbls. per hour. Magnolia's No. 27 Duval County Ranch, bottomed hole at 2,225 feet and made 6 bbls. per hour. Magnolia Petroleum Co.'s No. 6 J. W. Riley was completed for 6 bbls. per hour through one-quarter inch choke at 2,256 feet. Magnolia's No. 7 J. W. Riley bottomed hole at 2,269 feet and made 25 bbls. per hour. Reed and McKay's No. 7 State drilled to a total depth of 2,231 feet and made 75 bbls. per hour. The Texas Co.'s No. 8-A Duval County Ranch was completed for 75 bbls. per day at 1,501 feet.

Calhoun County

In Calhoun County, Continental Oil Co.'s No. 1 American National Realty Co., about 9 miles southeast of Seadrift, was drilling below 900 feet. Heep Oil Co.'s No. 1 Patricia Welder in the J. M. Rice Survey, was drilling gumbo at 6,235 feet. It topped the Heterostegina at 4,922 feet, had Frio at 5,446 feet and drilled top of Discorbis at 4,612 feet. Heep's No. 2 P. Welder, about 4 miles west of Clark, was drilling below 1,800 feet in shale.

Hidalgo County

In the southwestern part of Hidalgo County, Davis & Harrison's No. 1 Lula George in the Ancient Jurisdiction of Reynosa, was drilling 2,500 feet. Otto Woods' No. 1 John Lawrence was shut down for water.

Frio County

In Frio County and about 4 miles southwest of Pearsall, Amerada Petroleum Corp.'s No. 2 Halff & Oppenheimer was drilling at 4,825 feet.

Karnes County

About 4 miles northeast of the North Pettus Field, in Karnes County, George Ray's No. 1 Radford in the Nichols Survey has been abandoned as dry with total depth of 3,903 feet. W. R. Campbell and others' No. 1 Fernandez, in the Martinez Survey, was abandoned with total depth of 2,604 feet. On a drill stem test from 2,314-21 feet it showed 11 joints of salt water in two minutes.

Live Oak County

In the Lucas area of Live Oak County, Houston Oil Co.'s No. 5 Cartwright bottomed hole at 5,398 feet and has been completed for 30,000,000 feet of gas with 490 pounds rock pressure.

McMullen County

McMullen County marked up two abandonments during the week. Al Buchanan's No. 1 Hagist, in Section 18, was abandoned as dry with total depth of 2,267 feet. It had the Cole sand from 1,239-53 feet, Government Wells sand at 1,897-1,910 feet, Mirando City at 2,071 feet, and the Pettus at 2,259 feet. Bedwell's No. 1 Brown in Survey No. 54, was abandoned at 780 feet.

Nueces County

Near Robstown and in Nueces County, Diadem Oil Co.'s No. 1 J. C. Mayo in Section 23, was drilling brown lime and shale at 4,793 feet and reported running high. It topped the Heterostegina at 4,458 feet actual or 4,369 feet subsea. Nuco Oil Co.'s No. 1 Synthia Bluntzer was abandoned as dry with total depth of 5,831 feet. United Production Co.'s No. 2 Tolbert in the Puenticatas grant has been completed for 100 bbls. of gasoline daily through one-quarter inch tubing choke. It showed 1,800 pounds tubing pressure. It had sand from 4,805-11 feet and bottomed hole at 4,815 feet.

Real County

About 12½ miles northwest of Leakey, in Real County, H. J. Heartwell Drilling Co.'s No. 2 L. J. Haby, in the A.B.&M. Survey No. 175, was drilling at 1,800 feet.

Uvalde County

Humble Oil & Refining Co.'s No. 1 R. L. Anderson, about 3 miles northeast of Uvalde County, was drilling at 1,650 feet. This is to be a 6,000-foot test. Evans' No. 1 Stone, in the Kent Survey No. 652, had spudded.

Bastrop County

About 3 miles east of Elgin in Bastrop County, Marts & Beavens' No. 1 King has been abandoned with total depth of 2,230 feet. It topped chalk at 2,225 feet.

Jim Wells County

In the northern part of Jim Wells County, Putnam & Bode's No. 1 McCarley, in the Wallace D. Wade ranch, was drilling below 3,092 feet. On a drill stem test from 3,671-78 feet it showed salt water.

Zapata County

The Jennings Field in Zapata County marked up two completions during the past week. O. W. Killam's No. 32 Cuellar, was abandoned at 2,533 feet. Texas Co.'s No. 46 Jennings was completed for 60 bbls. daily at 1,226 feet.

Wildcat Operations in Southwest Texas

Week Ending June 2

ATASCOSA COUNTY

Company, well, farm name, section and block—	Remarks:
Texas Pet. Co.'s No. 2 Masterson, 290 ft. from E line and 280 ft. S of No. 1 (7⅛ mi. S of Sumerset), J. M. Mott Sur. No. 386, Subd. No. 3, B.&G.W. Carruthers estate	T.D. 2,018 ft.; abd.

BANDERA COUNTY

Parkford et al's No. 1 Mrs. R. L. Duke, G.H.&S.A. Sur., Sec. 7	Material.
Peerless O. & G. Co.'s No. 1 Garrison Sur. No. 506, 1,500 ft. from N and 2,700 ft. from E lines of Sur. (8 mi. SW of Medina)	Moving in material.

BASTROP COUNTY

Chas. E. Anderson's (Ca-Tex O. & G. Dev. Co.) No. 1 Pendergrass, 1,343 ft. from NE line, 310 ft. from SE line of 130-ac. tract in Henry Warnell Sur.	S.D. 1,815 ft.
Hinton et al's No. 1 Glass, 2,000 ft. from NW and 1,300 ft. from SW lines of Ferguson estate 239-ac. tract in Henry Warnell Sur.	Top Edwards 1,907 ft.; T.D. 1,986 ft.; showing sulphur wtr.; T.A.
Marts & Beavens' No. 1 King, 850 ft. from SW line of farm and survey and 1,000 ft. from NW line of 156-ac. King tract, in Enoch Harris Sur. (3 mi. E of Elgin)	T.D. 2,230 ft.; abd.
Marts & Beavens' No. 3 Reyes, 450 ft. S line, 150 ft. NW line of survey	T.D. 1,723 ft.; 6⅝-in. at 1,709 ft.; W.O.C.
Three Oil Co.'s No. 1 M. Ingram, H. S. Morgan Sur.	610 ft.; S.D.

BEE COUNTY

Caeser Oil Co.'s No. 1 R. E. Miller, F. Lewis Sur.	S.D. 60 ft.
Caeser Oil Co.'s No. 2 R. E. Miller, 350 ft. from W line, 150 ft. from S line of 100-acre tract in F. Lewis Sur.	Drlg. 1,625 ft.
Caeser Oil Co.'s No. 1 Pulling Est., F. Lewis Sur.	Derrick.
Dash Prod. Co.'s No. 2 Ruhman, 888 ft. from SW line and 2,113 ft. from SE line of Hodge Sur.	Rigging up.
Dirk Bros.' No. 1 Skinner-Harrison, 160 ft. from N and 990 ft. from W line in NW Section 10 of Ragley Subd. of Chittim Ranch, 1½ mi. from Tuleta	Coring for Pettus sand 3,825 ft.
Heep Oil Co.'s No. 1 J. C. Wood, 466 ft. from N and E lines of F. Crane Sur.	T.D. 4,708 ft.; drlg. new hole 3,934 ft.
Houston Oil Co.'s No. 1 Miller	Drlg. 2,513 ft.
Houston Oil Co.'s No. 1 Neihaus, 660 ft. W of Magnolia's No. 1 Scarborough	Moving in material.

(Continued on Page 45)

Cowden Area, Ector County, Extends Southwest; New High Gravity Completion in Ford Area

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., June 4.—The Cowden area in Ector County was extended three-quarters of a mile southwest with one of the best wells completed in the area when Landreth Production Co.'s No. 1-A T. P. Land Trust flowed 530 bbls. in 24 hours. It topped the first pay at 4,122-50 feet and gauged 355 bbls. in the first 24 hours. An increase was picked up from 4,193-4,200 feet, the total depth, where it is now shut down for a connection. It will probably be drilled a little deeper and given a shot to increase its production. Location is in Section 3, Block 32, Township 1s, T.&P. Survey. The same operators have made location for No. 3-A T. P. Land Trust in the same section and drilling has been started on No. 1-B.

Andrews County

The Ford area, in southern Andrews County, attracted attention during the week when Fuhrman Petroleum Corp.'s No. 1-B Bonner flowed 250 bbls. the first 24 hours while drilling to 4,493 feet. At this depth it has the appearance of developing into the largest producer completed in the area. It is in the center of the NE of Section 25, Block A-43, P.S.L. Survey, midway between the company's No. 1 Ford and No. 1 Bonner, both producers. It drilled broken pay between 4,226 and 4,400 feet, where it swabbed 241 bbls. in 24 hours, and encountered an increase in oil from 4,433-68 feet. It will no doubt be given a shot during the week, which is expected to increase the production considerably.

Humble Oil & Refining Co.'s No. 1 Kuykendall, 5 miles northwest in the Deep Rock Pool, has had no increase in production while drilling to 4,500 feet, and is now preparing to be shot. It is in Section 24, Block A-46, P.S.L. Survey. Same company's No. 1 Means, a wildcat 15 miles northeast in Section 2, Block A-35, P.S.L. Survey, is shut down at 3,133 feet to thicken the rotary baroid to guard against another blowout. At 2,957 feet it gauged 10,800,000 feet of gas daily.

Crane County

Wahlenmaier Petroleum Corp.'s No. 1 Edwards, 10 miles southeast of the Penn Pool and about 15 miles northwest of Gulf-McElroy Pool, and in Section 12, Block B-23, P.S.L. Survey, Crane County, is showing for a small producer after being plugged back to 3,540 feet and given a 120-quart shot from 3,490-3,525 feet. Oil rose 1,500 feet in the hole after the shot and it bailed 49 bbls. of oil in five hours. It will probably make a small well, and open another pool or extend the Waddell Pool, but is not expected to cause any immediate drilling unless it develops into a good commercial producer. Sulphur water was logged from 3,715-20 feet.

Schleicher County

George T. Wilson's No. 1 Bert Page, an old well being drilled to the Ordovician by J. M. Cooper, in Section 40, Block L, G.H.&S.A. Survey, Schleicher County, attracted attention the latter part of the week when it encountered 1,250,000 feet of sweet gas at 5,404 feet. It is shut down at that depth. A rainbow showing of oil appeared at 5,375 feet.

Yates Pool

In the Yates Pool, Pecos County, Mid-Kansas Oil & Gas Co. completed its No. 34-B Yates for an initial production of 1,993 bbls. of oil per hour after topping the pay at 1,107 feet. It is bottomed at 1,440 feet. In the same county, Mack T. Anderson's No. 1 T. N. McKenzie, 2½ miles south of the Taylor Link Pool, in Section 1, Block 604, G.C.&S.F. Survey, has a hole full of oil and is running 2-inch tubing to pump at a total depth of 1,345 feet. This apparently is the forerunner of another small pool.

Howard-Glasscock

Two wells were completed in the Howard-Glasscock Pool. Shell Petroleum Corp.'s No. 3 Phillips in Section 23, Block 33, Township 2s, T.&P. Survey, was treated with acid at 2,372 feet and was completed for a 58-bbl. well on the pump. Noble Oil Co.'s No. 1 Pure-Lee, in Section 20, Block 33, was completed for a potential production of 1,545 bbls. per day after treating with acid at a total depth of 2,132 feet. Both are located in Glasscock County. In the same pool, but in Howard County, Stacy B. Dorn and others' No. 1-A Davis, in Section 2, Block 30, Township 1s, T.&P. Survey, pumped 146 bbls. of oil in 24 hours after being treated with acid at a total depth of 2,573 feet. In Section 9, Block 30, Township 1s, T.&P. Survey, pumped 146 bbls. of oil in 24 hours after being treated with acid at a total depth of 2,573 feet. In Section 9, Block 30, Township 1s, T.&P. Survey, Sinclair Prairie Oil Co.'s No. 1 Percy Jones, in Section 9, Block 30, Township 1s, T.&P. Survey, was completed at 2,817 feet, swabbing 145 bbls. in 24 hours. Sun Oil Co.'s No. 6 Phillips was treated with acid and pumped 512 bbls. in 24 hours from a total depth of 2,380 feet. It is in Section 14, Block 33, Township 2s, T.&P. Survey.

Ward County

Ward County received two producers during the week. Atlantic Oil Producing Co.'s No. 7 Johnson in Section 9, Block 34, H.&T.C. Survey, was completed for an initial production of 267 bbls. per day flowing through tapered tubing at a total depth of 2,540 feet. In Section 10, Block 34, H.&T.C. Survey, California Oil Co.'s No. 7 York, was completed at a total depth of 2,530 feet and is good for 73 bbls. of oil daily.

Ordovician Tests

Humble Oil & Refining Co.'s No. 1 White and Baker, an Ordovician wildcat test in Pecos County, is drilling at 9,645 feet. It is in Section 44, Block Z, T.C. Survey. Gulf Production Co.'s No. 103 McElroy, another wildcat Ordovician test, had drilled to 10,262 feet in chert without being credited with reaching the Ordovician. It is southeast of the Gulf-McElroy Pool, on the Crane-Upton County line. This is by far the deepest test ever drilled in Texas, and the drilling is now exceptionally difficult because of the hard formation. Three crews are drilling on this test, and no trouble has been encountered, which is a commendable record.

Sixteen Locations

Sixteen locations were made in West Texas during the week, three wildcats in Crane and Edwards Counties. The others were within proven fields in Ector, Howard, Irion, Pecos, Upton, Ward and Winkler Counties.

In Crane County, Brandon and others have made location for a wildcat in Section 13, Block X, C.C.S.D.&R.G.N.G. Survey. The test is in the eastern part of the county and southwest of the Gulf-McElroy Field on the J. Cowden ranch. It is near the center of a 2,000-acre block.

Two wildcat locations were made in Edwards County, Ohl Housman's No. 1 Turney, in Section 176, C.C.S.D.&R.G. N.G. Survey, and H. H. Sides' No. 1 Turney in Section 164, C.C.S.D.&R.G. N.G. Survey.

The Railroad Commission has been asked by M. D. Bryant and Fred Turner, Yates Pool operators, to be allowed to run the full unit allowance from their two wells on two four-acre tracts in the heart of the field. Unless allowed to produce as much from the two wells as they could produce if the wells were situated on 100-acre units, they will insist that the allocation of the field be revised. At present proration orders are based on 100-acre units, with 75 per cent of the allowable determined by average potential of the unit, and 25 per cent by acreage, regardless of the number of wells. This plan has been considered an ideal way of prorating the field although at the time the orders were made the existence of small tracts in the heart of the field was not foreseen. If the orders are changed and placed on a per well basis, it will call for many new wells throughout the field, as many offset wells will have to be drilled to protect leases from drainage.

Wildcat Operations in West Texas

Week Ending June 4

Company, well, farm name, section and block—	Remarks:
ANDREWS COUNTY	
Fuhrman Pet. Co.'s No. 1-B Bonner, 1,320 ft. from N line and 1,320 ft. from E line of Sec. 25, Blk. A-43, P.S.L. Sur.	Flowed 250 bbls. first 24 hrs. Drlg. 4,493 ft.
Humble Oil & Ref. Co.'s No. 1 R. M. Means, 660 ft. from N and 660 ft. from E of Sec. 2, Blk. 2-35, P.S.L. Sur.	Drlg. 3,133 ft.
Humble Oil & Ref. Co.'s No. 1 Kuykendall, 1,980 ft. from S and E lines of Sec. 24, Blk. A-46, P.S.L. Sur.	Drlg. 4,500 ft.
Llano Oil Co.'s No. 1 J. E. Parker, 330 ft. from N line, 990 ft. from E line of Sec. 18, Blk. A-44, P.S.L. Sur.	Location.
BORDEN COUNTY	
Continental Oil Co.'s No. 1 Johnson, 660 ft. from S line and 660 ft. from E line of Sec. 34, Blk. 32, Twp. 4n, T.&P. Sur.	Drlg. 225 ft.
BREWSTER COUNTY	
Joiner-McIntyre's No. 1, 853 ft. from S, 2,390 ft. from E of Sec. 31, Blk. 352, W. M. Mitchell Sur.	S.D. 1,450 ft.
COKE COUNTY	
Wm. Hooper's No. 1 Gaston, 240 ft. from S line and 654 ft. from W line of Joseph Sur. No. 11	Drlg. 2,375 ft.
CRANE COUNTY	
Brandon et al's No. 1 J. Cowden, 330 ft. from N and 330 ft. from W line of Sec. 13, Blk. X, C.C.S.D.& R.G.N.G. Sur.	Location.
Wahlenmaier Petroleum Corp.'s No. 1 W. P. Edwards, 330 ft. from N and 330 ft. from E of SW cor. of the NE of Sec. 12, Blk. B-23, P.S.L. Sur.	Bailed 49 bbls. in 5 hrs.; plugged back to 3,540 ft.
CROCKETT COUNTY	
J. D. Young's No. 1 Shannon, 330 ft. from W line, 330 ft. from N line of Sec. 35, Blk. 1, G.C.&S.F. Sur.	S.D. 2,635 ft.
CULBERSON COUNTY	
Miller Bros.' No. 1 fee, 1,980 ft. from N and 660 ft. from E line of Sec. 31, Blk. 97, P.S.L. Sur.	S.D. 1,065 ft.
DAWSON COUNTY	
Ray Albaugh et al's No. 1 John Robinson, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 46, Blk. M, E.L.R.R. Sur.	S.D. 1,750 ft.
ECTOR COUNTY	
Atlantic Oil & Prod. Co.'s No. 2 Holt, 660 ft. from N line and 1,980 ft. from E line of Sec. 19, Blk. A, P.S.L. Sur.	Location.

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WICHITA FALLS AND RANGER

Texas Co. has completed its second high gravity producer on the Les K. Johnson ranch on the western edge of Foard County, in the Wichita Falls district. This well, No. 4 Johnson, about 2,000 feet northwest of the company's discovery well, No. 3 Johnson, which has been producing for about a year, flowed between 75 and 85 bbls. per hour through open casing equipped with 2-inch flow line, connections cutting down the output, and not allowing full gauge as to its daily capacity. It has been choked to 90 bbls. per day through one three-eighths inch choke. Total depth is 3,589 feet. Location is in Section 36, Block L, S.P.R.R. Survey.

The company has a block of nearly 8,700 acres surrounding the wells, the first of which made better than 3,500 bbls. when drilled to 3,577 feet. The wells also make a large volume of gas, which has a high gasoline content, and the company is operating a casinghead gasoline plant near the discovery, shipping the gasoline by tank cars. A short line connects No. 3 well with the Gulf Pipe Line Co.'s main line from the Panhandle, which transports the oil for the Texas Co. No. 3 producer tests 45.2 degrees, and gravity of the oil from the second well is expected to be the same. This is the highest gravity oil produced in the Wichita Falls or Panhandle district.

Jones and Stasney, independent geologists, have assembled a block of 6,000 acres, 4 miles north of Crowell in Foard County and location for a test has been made in the southeast 40 acres of Section 469, Block A, H.&T.C. Survey. It is to be spudded by June 30, and to go to 3,650 feet. Spreads have been sold to Texas Co., Magnolia Petroleum Co., Superior Oil Co. of California and others.

Jack County

The "Grass Roots" Pool, approximately 12 miles northwest of Jacksboro and 8 miles southeast of Antelope in the J. Irvine Survey, Jack County, is one of the most active places in the Wichita Falls district. This pool was opened by McDaniel and others on the J. M. Bloodworth lands, on April 4. There are now six wells producing and seven or more drilling or preparing to drill. Production is coming from the Tack sand just below the Gunsight lime, or around 280 feet. There are now 420 acres proven to production, the wells being produced by small gasoline engines connected to water

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Possible New Field Opened in Cherokee County; Hot Oil Again Flooding East Texas Field

By L. E. BREDBERG

DALLAS, Tex., June 4.—East Texas has come through with another potential field, the fifth within eight months. However, two are producing only gas, another mostly gas with some oil, and the other, the Cayuga Field of northwest Anderson County, is producing a hybrid oil testing around 30 gravity, containing 1.7 sulphur.

The area just opened, 6 miles southwest of the town of Rusk, in Cherokee County, may prove a large one, according to some geologists. It is defined on the west by Cranfill & Reynolds' No. 1 Southern Pine Lumber Co., about 5 miles away, which went to 5,170 feet. Mustang Oil Co.'s No. 1 Decker, about the same distance south, was also dry, total depth 5,232 feet. It had sand from 5,178-80 feet. The other test had sand at 5,146 feet. The area is defined in no other direction, consequently a broad field may be developed. A large structure swings to the north and northeast around the town of Rusk.

T. J. Wood of Houston and others obtained considerable acreage from the Shell Petroleum Corp. for drilling the test, which is in the NE of the New Birmingham Development Co.'s lands in the Levi Jordan Survey. Shell Petroleum Corp. retained its 6,000-acre block around the well, whereas other companies relinquished some acreage within recent months. Humble Oil & Refining Co., however, aided the operators in putting down the test by buying a large spread near the well. Sun Oil Co. and Pure Oil Co. hold substantial pieces of acreage within a short distance. Operators and company men are now flocking into the area to lease whatever they can find open. Many small farms outside of the Shell block are open to leasing, and drilling can become as rampant as in the East Texas Field if the area is extended.

Log of Well

The well logged the Pecan chalk from 3,980-4,306 feet; the Austin chalk was logged from 4,840-5,119 feet. The first sand was reported at 5,120 feet. From 5,137-39 feet a good clean porous sand having an oil stain and oil odor was cored. The hole was corrected from 5,139 to 5,125 feet, however. Seven-inch casing was set at 5,116 feet. More sand was cored in the well but was not recovered, therefore the exact sand thickness cannot be given at this time. Surface elevation is 431 feet.

On June 3 the well was tested at 4 p.m. flowing through one-half inch choke on tubing, then through three-eighths inch choke on casing. It made 25 bbls. per hour. At 12:30 p. m., June 4, it was opened for one-half hour, flowing 13 bbls. through one-quarter inch choke on tubing. Working pressure on tubing was 400 pounds. The oil tested 40 gravity. It is of the same texture as East Texas Field oil, and the same green color as the majority of Woodbine sand oils. The drilling mud and fresh water is now almost all out of the hole and the oil is clearing.

Tubing was swung 1 foot off bottom, and the bottom 10 feet is perforated. The well was washed two hours, then swabbed four times before it started flowing on June 3, opening the third producing area in the country. Other production in the county is found in the Boggy Creek Pool, about 18 miles northwest on the Anderson-Cherokee County line, and in the northeast corner of the county, which is an extension of the East Texas Field. That is approximately 27 miles northeast of the new discovery.

The owners of the wells are now erecting three 1,000-bbl. tanks preparatory to making a test. The well will no doubt prove larger than when it was flowed into the slush pit and was cleaning itself.

The Texas Pipe Line Co. is laying 3 miles of pipe to connect its North Texas-Gulf Coast main line to the well. Several companies have men in the field purchasing acreage which is selling for $500 cash and $500 in oil near the well; $10 and $20 being paid for leases as far as 5 miles away from the discovery.

Cayuga Area

The Cayuga Field in northwest Anderson County has apparently been defined on the northeast by J. R. Meeker and associates' No. 1 Duncan in the A. Enes Survey, approximately one-third mile northeast of the nearest producer. This test is plugging to abandon at total depth of 4,192 feet. It topped salt water sand at 4,187 feet after topping the Woodbine sand at 4,161 feet. This is the first disappointment in the field. On the extreme opposite side, Roeser & Pendleton, Inc.'s No. 1 Bowyer, in the Everett Ritter Survey, approximately 1½ miles northwest of the Cayuga discovery, ran nearly 100 feet higher on top of the Pecan Gap chalk than the discovery. However, the Pecan Gap chalk, the first important marker in the Woodbine sand belt, is not the most reliable marker, the Austin chalk being held as the best criterion as to how a test is running on structure in regard to other tests. It topped the Austin chalk at 3,085 feet, or minus 2,770 feet, which throws it around 87 feet higher than the discovery well on this formation, making the field appear as having better chances of being extended northwest.

Between the discovery well and the Bowyer test, Tide Water Oil Co. and Texas Seaboard Oil Co. are about ready to complete their No. 2 Edens, nearly one-half mile northwest of the discovery. The test topped the Woodbine sand at 4,011 feet and cored saturated sand from 4,030-4,051 feet, and set casing preparatory to completing. This saturated sand body is the best yet cored.

Interesting Wildcats

Jameson and Byron's No. 1 Price, in the Juan Y'Barbo Survey, northeast of Blackfoot and approximately 15 miles due east of the Cayuga area, Anderson County, has been abandoned at 5,217 feet in shale. Elevation is 512 feet and base of the broken Austin chalk is 4,610 feet.

Byrd and Frost and others' No. 1 Mrs. Alice Scott, in the J. Crawford Survey, a short distance northwest of Slocum in south central Anderson County, is slated for plugging after testing salt water from 5,471-81 feet. This test had a good showing of gas and a little oil showing, but apparently plugging back and redrilling has not been successful.

McElreath and Suggett have abandoned No. 1 Holly in the James Moore Survey, near Winnsboro in northeast Wood County. It topped the water sand at 4,505 feet and was not tested. Total depth is 4,627 feet.

Daniels Oil & Royalty Co. is planning to plug back No. 1 Ball in the J. Y. Aguilera Survey, near Turlington, still further. It was formerly plugged from total depth of 5,003 feet to 4,865 feet to shut off the water and produce as a gasser of around 5,000,000 feet daily, but the operators believe further plugging will benefit the well, which is about 15 miles northwest of the Long Lake area in southwest Anderson County. The Ball well is in Freestone County.

Hunt Production Co. has abandoned its No. 1 H. Rayford, in the John L. Dillard Survey after testing salt water at 5,054 feet. This is a wildcat test in Smith County.

There were six wildcat locations reported in East Texas. A Trinity sand test to be drilled by Wheelock and Collins of Corsicana, was mentioned last week.

Magnolia Petroleum Co. is to drill a test 7 miles northeast of Mount Vernon in the A. P. Dupree farm in the W. D. Talliferro Survey, Franklin County. D. A. Hale and others are to drill on the L. M. Hall farm in the A. Caro Survey, 1 mile southeast of Miller Grove in Hopkins County. Another company is preparing to drill on the Oscar Popper farm in the James Moore Survey, 5 miles northwest of Greenville in Hunt County. Alex Snyder and others have rig up on the T. Holmes farm in the A. N. McKnight Survey No. 399, 1½ miles southeast of Hawkins in Wood County.

The Jamestown area of Upshur County is getting another test. Ben G. Barnett and others are drilling No. 1 W. S. Jones in the James N. Dunn Survey, 1½ miles northwest of Jamestown. Several tests in this area have had good showings of oil, and one to the southeast has made a good producer extending production. Other producers are expected to extend this area, especially to the east of the Otto Morris well completed recently.

Tide Water Oil Co. and Texas Seaboard Oil Co. have made locations for two more tests in the Cayuga area. Their No. 1 Ware, 467 feet from the south line and 1,400 feet from the west line of a 571.65-acre tract on the G. W. Ware farm in the Thomas Bristow Survey, is approximately one-half mile north of the nearest producer.

Van Field

J. D. Wrather is now the only independent operator holding Woodbine sand production in the Van or Carroll extension of the Van Field, Van Zandt County. It topped the sand at 2,935 feet and flowed 15 bbls. per hour through eleven-sixteenths inch choke. This is a slight northeastern extension to the Carroll district, part of the Van Field, but outside of the Van Joint Account operated by Pure Oil Co. Several companies have production in the Carroll district, but no independent operator. A couple of other independents sold their small leases to offset majors some time ago, leaving the production held by major producing units. However, in the Nacatosh sand area north of the field, several independents have drilled in small shallow wells.

EAST TEXAS FIELD

Theft of oil in the East Texas Field is just beginning, according to many who are watching the situation, especially in the Gladewater area where there are 26 small refineries operating, several operating on overproduced oil. There are many gathering lines in this area, and the tapping of wells and these lines, and

East Central Texas Wildcats

Week Ending June 4

ANDERSON COUNTY

Company, well, farm name, section and block—	Remarks
Barnsdall Oil Co.'s No. 1 W. L. Tubbs, 467 ft. from W line and center of N and S lines of 40-ac. tract, Samuel Edmondson Sur.	Top oil sand 4,064 ft.; base 4,080 ft.; waiting on cmt. to set; T.D. 4,089 ft.
Barnsdall Oil Co.'s No. 1 Loper, 467 ft. from N and W lines of 40-ac. tract, 1 mile SW of Cayuga, James Wilson Sur.	Derrick.
Harry Bass et al's No. 1 J. A. Campbell, 467 ft. from N and W lines of 151.30-ac. tract, James Wilson Sur.	Location.
Pete Burton et al's No. 1 Freeman Baptist Church, 105 ft. due W of NW cor. of W. Chancellor Sur. in center of a 2-ac. tract, W. T. Meredith Sur.	Location.
Byrd-Frost et al's No. 1 Alice Scott, 2,100 ft. from N and 700 ft. from E lines of Joseph Crawford Sur., 1¼ miles NW of Slocum	Waiting on cmt. to set 5,461 ft.
Byron and Jameson's No. 1 S. N. Price, 330 ft. from S and E lines of S. N. Price 60-ac. tract, Juan Y'Barbo Sur., 2 miles NE of Blackfoot	S.D. 4,974 ft.
Hill and Hill's No. 1 R. E. Curtis, 467 ft. from N line and 250 ft. from W line of tract, B. Kimbrough Sur.	Location.
J. R. Meeker's No. 1 H. H. Duncan, 150 ft. from N and S lines and 419 ft. from W line of 12.97-ac. tract, one-quarter mile NE of Cayuga, A. Enes Sur.	Drlg. 4,157 ft.
Roeser and Pendleton's No. 1 Virginia Boyer, 467 ft. from E line and 1,347 ft. from S line of 200-ac. tract, Everett Ritter Sur.	Drlg. 400 ft.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 2 Rampy, 467 ft. from N and W lines of lease, James Wilson Sur.	Derrick.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 G. W. Ware, 467 ft. from S line and 1,400 ft. from W line of 571.65-ac. tract, Thomas Bristow Sur.	Location.
Texas Seaboard Oil Co. and Tide Water Oil Co.'s No. 2 Edens, 1,400 ft. from E line and 2,333 ft. N of S line of Samuel Snider Sur.	Drlg. 3,877 ft.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 Lou Ella Horton, 467 ft. from N line and 467 ft. from E line of Horton 105.37-ac. tract, James Wilson Sur.	Set csg. 599 ft.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 S. F. Robertson, 470 ft. from N line and 1,566 ft. from W line of 50.4-ac. tract, Samuel Edmondson Sur.	Set csg. 605 ft.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 4 Wills, 470 ft. from most northerly S line and 467 ft. from E line of tract, W offset to Hill and Hill's No. 1 Tubbs, Samuel Edmondson Sur.	Drlg. 750 ft.

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the use of by-passes is almost entirely out of hand of the Railroad Commission forces, supposed to check such activities. Operators now feel the commission has had sufficient time to curtail overproduction since given added powers by the courts, but excess production has been increasing each week until at the present time some field men are of the opinion overproduction amounts to around 100,000 bbls. per day.

Oil Being Stolen

Oil now is not only being overproduced but is being stolen. One fee owner found a producer by-passing all of his wells and not paying royalty on the overproduced oil. Two lead lines from the casing were connected below the regular flow line, and below the surface, taking out, no one can estimate, how much oil. The "racket" has reached such proportions that the majority of operators and many disinterested people in the district are discussing to what end it will come.

Companies have found lines tapped by other lines, have found that thieves have been tampering with well connections and hauling out oil by trucks under cover of darkness, and have found still other methods of converting oil illegally. One company found a water line tapped and in use by an operator to run oil to a local refinery. The major company then pumped water through the line and soon found to what refinery the line was connected when the refiner put up a loud "howl" about ruining his refinery. One major pipe line company having lines in the Gladewater area is preparing to "strip" all of its gathering lines to look for "taps" and by-passes. Others will no doubt take the same precautions to do away with thievery and illegal use of their lines. Oil trucks have again become busy operating at night picking up oil from wells, leases, tanks and other available hot oil sources.

Another extension gasser was drilled in the southern part of the field this week. This well, Sinclair Prairie Oil Co.'s No. 1 Kangerga, in the W. Pettit Survey, topped the sand at 3,627 feet and gauged 39,238,880 feet of gas at a total depth of 3,656 feet. It is a short distance south of another gasser drilled by Mid-Kansas Oil & Gas Co.

COMPLETIONS IN EAST TEXAS DISTRICT

North Gregg County

Amatex Oil Co.'s No. 5 Chanie Jones, top sand 3,737 feet, initial production 100 bbls. per hour through open tubing, total depth 3,657 feet. Arkansas Fuel Oil Co.'s No. 4 E. M. Whatley, top sand 3,538 feet, initial production 162 bbls. in one-quarter hour through open tubing, total depth 3,539 feet. Atlantic Oil & Producing Co.'s No. 7 M. L. Anderson, top sand 3,487 feet, initial production 130 bbls. per hour through open tubing, total depth 3,525 feet. Bishop Oil Corp.'s No. 7 Todd, top sand 3,533 feet, initial production 50 bbls. in one-half hour through open tubing, total depth 3,593 feet. Empire Gas & Fuel Co.'s No. 11 J. Bender, top sand 3,563 feet, initial production 30 bbls. in one-quarter hour through open tubing, total depth 3,632 feet; No. 8 J. T. Jeter, top sand 3,592 feet, initial production 24 bbls. in one-quarter hour through open tubing, total depth 3,629 feet; No. 21 Taylor Lee, top sand 3,530 feet, initial production 32 bbls. in one-quarter hour through open tubing, total depth 3,525 feet. Faith Oil Co.'s No. 7 J. J. Fuller, top sand 3,686 feet, initial production 30 bbls. in one-half hour through three-quarters inch tubing choke, total depth 3,714 feet.

Everett and Phillips' No. 1 Simmons heirs, top sand 3,635 feet, initial production 60 bbls. in one-half hour through open tubing, total depth 3,645 feet. Gulf Production Co.'s No. 17 Fishburn, top sand 3,479 feet, initial production 70 bbls. per hour through open tubing, total depth 3,508 feet. Humble Oil & Refining Co.'s No. 15 J. F. Bowles, top sand 3,562 feet, initial production 16 bbls. in one-quarter hour through open tubing, total depth 3,610 feet. T. D. Humphrey's No. 1 J. H. Thomas, top sand 3,606 feet, initial production 35 bbls. in 45 minutes through open tubing, total depth 3,618 feet. Monte Oil Co.'s No. 5-B Fenn, top sand 3,588 feet, initial production 32 bbls. in 28 minutes through open tubing, total depth 3,643 feet.

Magnolia Petroleum Co.'s No. 18 L. J. Evans, top sand 3,634 feet, initial production 120 bbls. per hour through open tubing, total depth 3,644 feet; No. 7 A. J. Green, top sand 3,567 feet, initial production 90 bbls. per hour through open tubing, total depth 3,590 feet. Root and Rhodes' No. 2 Clements, top sand 3,545 feet, initial production 90 bbls. per hour through open tubing, total depth 3,568 feet. Shell Petroleum Corp.'s No. 17 W. T. Burnside, top sand 3,488 feet, initial production 45 bbls. in one-half hour through open tubing, total depth 3,545 feet. Skipper and Bivens' No. 3 Magrill, top sand 3,645 feet, initial production 92 bbls. per hour through open tubing, total depth 3,695 feet. Smith County Oil & Gas Co.'s No. 2 M. Green, top sand 3,618 feet, initial production 30 bbls. in 45 minutes through open tubing, total depth 3,669 feet. Stanolind Oil & Gas Co.'s No. 9 Albright, top sand 3,537 feet, initial production 50 bbls. in one-half hour through open tubing, total depth 3,557 feet. Tide Water Oil Co.'s No. 14 Davis, top sand 3,552 feet, initial production 15 bbls. in 10 minutes through open tubing, total depth 3,587 feet; No. 12-A Middleton, top sand 3,524 feet, initial production 14 bbls. in 10 minutes through open tubing, total depth 3,544 feet. W. C. Turnbow Petroleum Corp.'s No. 2 J. C. McKinley, top sand 3,619 feet, initial production 90 bbls. per hour through open tubing, total depth 3,627 feet. United East & West Oil Co.'s No. 2-A Sabine River, top sand 3,577 feet, initial production 100 bbls. per hour through open tubing, total depth 3,588 feet. Woodley Petroleum Co.'s No. 2 H. Mosley, top sand 3,461 feet, initial production 71 bbls. per hour through open tubing, total depth 3,472 feet.

Map showing location of new Woodbine sand discovery in East Texas

South Gregg County

A.B.C.D. Oil Co.'s No. 5 J. L. McNeely, top sand 3,626 feet, initial production 75 bbls. per hour through three-quarters inch tubing choke, total depth 3,630 feet. DeArman and McMillan's No. 5 Strong and Alexander, top sand 3,667 feet, initial production 80 bbls. per hour through open tubing, total depth 3,672 feet. A. A. Oil Co.'s No. 1 A. A. Lockhart, top sand 3,645 feet, initial production 82 bbls. per hour through open tubing, total depth 3,657 feet. General Crude Oil Co.'s No. 10 S. Scott, top sand 3,625 feet, initial production 19 bbls. in one-quarter hour through three-quarters inch tubing choke, total depth 3,636 feet. Gulf Production Co.'s No. 20 H. C. Alexander, top sand 3,514 feet, initial production 92 bbls. per hour through open tubing, total depth 3,539 feet; No. 55 Hilburn, top sand 3,549 feet, initial production 75 bbls. per hour through open tubing, total depth 3,580 feet; No. 14 Muckelroy, top sand 3,571 feet, initial production 82 bbls. per hour through open tubing, total depth 3,589 feet.

Humble Oil & Refining Co.'s No. 13 D. Thomas, top sand 3,540 feet, initial production 86 bbls. per hour through open tubing, total depth 3,600 feet. Island and Cutberth's No. 3 Register, top sand 3,636 feet, initial production 100 bbls. per hour through open tubing, total depth 3,647 feet. Bay Oil Co.'s No. 8 B. B. Peterson, top sand 3,593 feet, initial production 46 bbls. in one-half hour through open tubing, total depth 3,625 feet. Paul L. Miller's No. 2-A Laird Brothers, top sand 3,527 feet, initial production 35 bbls. in one-quarter hour through open tubing, total depth 3,575 feet. Sam P. Shelburne's No. 1 W. B. Walker, top sand 3,563 feet, initial production 60 bbls. per hour through open tubing, total depth 3,573 feet. Shell Petroleum Corp.'s No. 8 N. Jobe, top sand 3,487 feet, initial production 37 bbls. in one-half hour through open tubing, total depth 3,554 feet. Sinclair Prairie Oil Co.'s No. 16-B King, top sand 3,438 feet, initial production 30 bbls. in one-quarter hour through 1¼-inch tubing choke, total depth 3,467 feet. Stodel Oil Co.'s No. 7 Ladd Smith, top sand 3,600 feet, initial production 70 bbls. per hour through open tubing, total depth 3,600 feet; No. 8 Ladd Smith, top sand 3,588 feet, initial production 70 bbls. per hour through open tubing, total depth 3,600 feet. M. K. Towns' No. 4 G. Davis, top sand 3,593 feet, initial production 35 bbls. in one-half hour through open tubing, total depth 3,620 feet. Joe Zeppa's No. 2 M. Charles, top sand 3,641 feet, initial production 5 bbls. in five minutes through open tubing, total depth 3,648 feet.

North Rusk County

Devonian Oil Co.'s No. 8 W. P. Moore, top sand 3,752 feet, initial production 41 bbls. in one-half hour through open tubing, total depth 3,763 feet. J. Beren and others' No. 4 Ed Holt, top sand 3,652 feet, initial production 60 bbls. per hour through open tubing, total depth 3,733 feet. Darby Petroleum Co.'s No. 12 C. O. Christian, top sand 3,717 feet, initial production 52 bbls. in one-quarter hour through open tubing, total depth 3,750 feet. Devonian Oil Co.'s No. 26 R. A. Motley, top sand 3,736 feet, initial production 70 bbls. per hour through open tubing, total depth 3,749 feet. M. T. Flannigan's No. 3 Major Kennedy, top sand 3,720 feet, initial production 75 bbls. per hour through open tubing, total depth 3,740 feet. Freedman and Swindler's No. 7 Mayfield, top sand 3,715 feet, initial production 175 bbls. per hour through open tubing, total depth 3,717 feet.

Gulf Production Co.'s No. 3 H. Baton, top sand 3,546 feet, initial production 40 bbls. per hour through three-quarters inch tubing choke, total depth 3,628 feet; No. 11 A. Laird, top sand 3,590 feet, initial production 80 bbls. per hour through open tubing, total depth 3,604 feet. Humble Oil & Refining Co.'s No. 24 Peterson, top sand 3,611 feet, initial production 103 bbls. per hour through open tubing, total depth 3,630 feet. S. S. Laird Oil Co.'s No. 5 J. N. Peterson, top sand 3,602 feet, initial production 45 bbls. in 20 minutes through open tubing, total depth 3,624 feet. Yandle Rogers' No. 1 Sam Williams, top sand 3,553 feet, initial production 150 bbls. in 24 hours' pumping, total depth 3,662 feet. Stanolind Oil & Gas Co.'s No. 7 Ben Laird, top sand 3,650 feet, initial production 37 bbls. in 24 minutes through open tubing, total depth 3,669 feet.

South Rusk County

A. A. Oil Co.'s No. 1 George Curbo, top sand 3,665 feet, initial production 12 bbls. in one-half hour through open tubing, total depth 3,698 feet. Atlantic Oil Producing Co.'s No. 3 Arnold, top sand 3,618 feet, initial production 50 bbls. per hour through open tubing, total depth 3,700 feet; No. 4 J. E. Arnold, top sand 3,660 feet, initial production 65 bbls. per hour through open tubing, total depth 3,726 feet; No. 17 Ida L. Kinney, top sand 3,636 feet, initial production 40 bbls. per hour through open tubing, total depth 3,684 feet. Baldwin and Sultan's No. 3 M. L. Thompson, top sand 3,676 feet, initial production 50 bbls. in one-half hour through open tubing, total depth 3,721 feet.

Humble Oil & Refining Co.'s No. 15 J. R. Box, top sand 3,641 feet, initial production 64 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,732 feet; No. 6 S. A. Glover, top sand 3,645 feet, initial production 24 bbls. in one-half hour through open tubing, total depth 3,733 feet; No. 41-A M. and R. Kangerga, top sand 3,640 feet, initial production 43 bbls. in one-half hour through open tubing, total depth 3,679 feet; No. 10 W. B. King, top sand 3,698 feet, initial production 75 bbls. per hour through three-quarters inch tubing choke, total depth 3,699 feet; No. 12 H. A. Pierce, top sand 3,710 feet, initial production 75 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,732 feet; No. 39 W. L. Price, top sand 3,736 feet, initial production 38 bbls. in one-half hour through open tubing, total depth 3,803 feet; No. 4-A H. White, top sand 3,689 feet, initial production 66 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,775 feet; No. 20 J. H. and I. W. Wadley, top sand 3,667 feet, initial production 97 bbls. per hour through open tubing, total depth 3,685 feet.

Hunt Production Co.'s No. 5 J. M. Finney, top sand 3,579 feet, initial production 20 bbls. in two hours pumping, total depth 3,680 feet; No. 4 M. L. Thompson, top sand 3,721 feet, initial production 31 bbls. in one-quarter hour through open tubing, total depth 3,760 feet; No. 7 I. R. Thrash, top sand 3,738 feet, initial production 43 bbls. in 11 minutes through open tubing, total depth 3,776 feet. Louisiana Oil & Refining Co.'s No. 4 Kirsch, top sand 3,602

feet, initial production 35 bbls. in one-quarter hour through open tubing, total depth 3,608 feet. Maco Oil Co.'s No. 4 Mayfield-Alford, top sand 3,613 feet, initial production 15 bbls. in 20 minutes through three-quarters inch tubing choke, total depth 3,680 feet. Miller Production Co.'s No. 8 Bradford, top sand 3,538 feet, initial production 30 bbls. per hour through open tubing, total depth 3,600 feet. Octo Oil Co.'s No. 1-B Frederick, top sand 3,545 feet, initial production 20 bbls. per hour through open tubing, total depth 3,680 feet. Ortiz Oil Co.'s No. 5 H. M. Hale, top sand 3,558 feet, initial production 35 bbls. per hour pumping, total depth 3,732 feet. Sinclair Prairie Oil Co.'s No. 1 Kangerga Brothers, top sand 3,627 feet, initial production 39,238,880 feet of gas, total depth 3,656 feet; No. 14-B Mayfield Co., top sand 3,620 feet, initial production 29 bbls. in one-quarter hour through open tubing, total depth 3,630 feet. E. M. Thomasson's No. 3 M. L. Thompson, top sand 3,701 feet, initial production 70 bbls. per hour through open tubing, total depth 3,731 feet. Trico Oil Co.'s No. 3 R. A. Motley, top sand 3,727 feet, initial production 18 bbls. in one-quarter hour through open tubing, total depth 3,734 feet.

Smith County

K. O. T. Oil Co.'s No. 4 Cook, top sand 3,733 feet, initial production 65 bbls. per hour through open tubing, total depth 3,734 feet. Magnolia Petroleum Co.'s No. 14 Loosier, top sand 3,677 feet, initial production 17 bbls. in 10 minutes through open tubing, total depth 3,684 feet.

Upshur County

A. D. King's No. 3 Lloyd, top sand 3,718 feet, initial production 100 bbls. per hour through open tubing, total depth 3,736 feet. Magnolia Petroleum Co.'s No. 12 R. A. Adkins, top sand 3,702 feet, initial production 50 bbls. per hour by heads on pump, total depth 3,724 feet. Mitcham Oil Co.'s No. 2 Free, top sand 3,674 feet, initial production 30 bbls. in 45 minutes through open tubing, total depth 3,679 feet. Mudge Oil Co.'s No. 12-A Free, top sand 3,630 feet, initial production 80 bbls. per hour through open tubing, total depth 3,700 feet. Shano Oil Co.'s No. 8 B. Doby, top sand 3,734 feet, initial production 30 bbls. in 20 minutes through open tubing, total depth 3,744 feet. Sun Oil Co.'s No. 4 Watkins, top sand 3,647 feet, initial production 28 bbls. per hour through open tubing, total depth 3,675 feet.

(Cayuga District) Anderson County

Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 2 N. Wills, top Pecan Gap 2,228 feet, base 2,395 feet, top Austin chalk 3,167 feet, base 3,595 feet, base hard Austin chalk 3,386 feet, top Woodbine sand 3,839 feet, top gas sand 3,384 and 4,050 feet, top oil sand 4,084-89 feet, top water sand 4,095 feet, total depth 4,113 feet, plugged back to 4,089 feet, initial production 108 bbls. in 12 hours through three-sixteenths inch tubing choke (Samuel Edmondson Survey).

WILDCAT COMPLETIONS

Freestone County

Daniels Oil & Royalty Co.'s No. 1 P. D. C. Ball, top Pecan Gap 3,029 feet, base 3,224 feet, top Austin chalk 4,102 feet, top sand 4,844 feet, initial production 10,000,000 feet of gas with show of salt water, total depth 5,003 feet, plugged back to 4,865 feet (Jose Ignacio Aguelera Survey).

Henderson County

Roy Black and others' No. 1 C. B. Meredeth, top Pecan Gap 2,320 feet, base 2,557 feet, top Austin chalk 3,350 feet, base 3,756 feet, top Woodbine sand 4,083 feet, drill stem test from 4,079-4,129 feet, tested 2,700 feet of salt water in 20 minutes, dry and abandoned, total depth 4,235 feet (Wiley Kay Survey).

Smith County

Texas Trading Co.'s No. 1 O. T. Ray, top Pecan Gap 3,118 feet, base 3,280 feet, top Austin chalk 4,334 feet, top hard Austin chalk 4,440 feet, base Austin chalk 4,615-30 feet, top Woodbine sand 4,920 feet, top Red Beds 5,025 feet, dry and abandoned, total depth 5,194 feet (M. T. Duncan Survey).

Upshur County

F. A. Fuller and others' No. 1 Penn, top Pecan Gap 2,398 feet, base 3,008 feet, top Austin chalk 3,696 feet, base 3,724 feet, top sand 3,744 feet, dry and abandoned, total depth 3,767 feet (James Scott Survey).

Van Zandt County (Van Pool)

J. D. Wrather and others' No. 1-A G. W. Carter, top Pecan Gap 2,007 feet, base 2,055 feet, top Austin chalk 2,510 feet, base 2,735 feet, top sand 2,935 feet, initial production 15 bbls. per hour through eleven-sixteenths inch tubing choke (William Daniel Survey).

Portable Welding Unit for Pipe Line Repair

(Continued from Page 14)

To make the power of the automobile or tractor engine available, a suitable power take-off is necessary so that the flow of energy may be directed from the truck or automobile drive to the generator or other piece of equipment mounted upon either type transportation unit. Such power take-offs are used to drive air compressors, flue cleaners, pumps, drilling machines, winches, and generating outfits. The automobile or tractor engine is usually of sufficient horsepower to serve well for such purposes and the Welsco power take-off developed by the Welders Supply Co., Tulsa, Oklahoma City and Dallas, is nearly a direct connection between engine and driven unit.

The power is taken off the clutch shaft ahead of the transmission. It has no moving parts while the truck is in operation. The assembly is full-floating, supported by oversize roller and ball bearings running in a constant oil bath. Power is transmitted by a large, silent chain. The governor, which is directly connected, functions only when the unit is operating as a welder or power plant, when a constant speed is maintained. It is only necessary to shift a lever to change the unit from a passenger truck to a full 300-ampere arc welder with electrical power plant.

The generator used on the Welders Supply Co.'s portable unit can be obtained in either 200, 300 or 400-ampere size and is made by the General Electric Co., N.E.M.A. rating. It is of drip-proof construction; has a stable, flexible arc with quick recovery free of spark commutation and large, protected and easily read instruments.

All generators are of the latest 40-volt type, especially designed for arc welding with the added advantage of an adequate stabilizer to insure equally good results with bare rod or carbon welding.

Large and Small Units

Two types of internal combustion engine driven units are available using the Welsco power take-offs, one taking its power off an extended clutch shaft adaptable to all types of truck or automobiles whose transmissions are separate from the bell housings.

The other type of take-off consists of a conventional unit which takes the place of the middle cross member in the chassis and has the benefit of all transmission speeds and is suitable for driving a welding machine while transmission is in high gear. The complete generating unit consists of a generator and sub frame and power take-offs for either the International 1½-ton trucks and all models of Fords and Chevrolets.

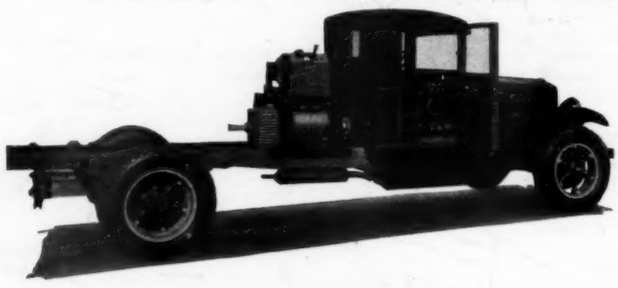
Typical Operation

If a break or leak is reported, one of these portable welding generator units can proceed to the point on the line where it has occurred and travel at 40 miles per hour on good roads with the large 1½-ton truck or at higher speed with the smaller unit, thus giving a convenient range of 50 to 75 miles on each side of the station where the truck is housed.

Arriving at the right of way, the truck will travel over plowed fields or through mud, if necessary, to the point where needed. If it is night and the unit is equipped with the auxiliary power generator rated at 1½ kilowatts, a large floodlight can be set up or ten 100-watt electric lamps strung to give light for the work.

The hole can be dug to the pipe line and the oil, or gasoline, pumped out of the pit with a rotary or centrifugal pump attached to an extension of the main generator shaft. This pump unit will pick up all fluid and remove it to a safe distance away from the point where the welding is to be done. The pump can be used for a transfer pump if needed or it can build up sufficient pressure to return the fluid to the pipe line when it is again operating under normal pressures up to 450 pounds.

The truck body is large enough to accommodate the equipment needed for acetylene welding, such as cylinders of gas and all auxiliary material. This will permit the pipe to be cut if necessary, or if cutting is not needed the electric arc can be used to weld the break and the work finished permanently and quickly.



Service truck used by the Gulf Pipe Line Co. equipped with generator for electric current for welding and auxiliary generator for power for light

Using CO_2 Gas

If the line is carrying gas or gasoline it is imperative that all trace of the fluid or gas be removed before any welding operations are started. This can be done in the case of the gasoline line by lifting a portion of the pipe high enough to drain the fluid away from the break. The pipe is raised with a boom mounted upon a tractor or truck, or by a crew of men using jacks. The fluid will run to low points and in a short time it is possible to proceed with the welding.

However, this work, or the repairs on a gas line, can be done much more safely if CO_2 gas is forced into the empty line and into the pit dug for the welder. This inert gas will displace gas or gasoline vapors and reduce the risk in welding.

The gas can be carried in cylinders or it may be generated by heat from a dry crystal used for fighting fires. This crystal can be transported in a sack and is not deteriorated by moisture nor is it exploded or changed in character by shock. It is possible to make a small retort that can be heated and the CO_2 gas generated and then forced into the empty pipe by rotary compressor or other means.

The extended shaft on the welding generator can be used for driving a rotary compressor or pump, or the current generated can be used for an electric grinder, drill, wire brush, flue polisher, or flue cleaner. In other words, the portable generating outfit is not confined to use along a pipe line, but can be used for many other purposes, and as welding is employed in many departments of the oil industry the portable arc welder will have extensive uses.

West Texas Fields

(Continued from Page 39)

well pumps on the producers. The oil is 40.9 gravity, most of it being trucked to the Henrietta Refining Co.'s plant at Henrietta. Sinclair Prairie Pipe Line Co. has a line within 4 or 5 miles east, connecting with the Boyd Pool and may connect with this new shallow pool. There is but little gas with the oil. The wells are good for 60 to 120 bbls. per day, pumping.

Baker, Jones and Stasney are now completing their No. 1 Nail, in Section 124, E.T.R.R. Survey, western Shackelford County. It made an estimated 4,000,000 feet of gas, but no estimate has been made as to its oil possibilities. Rods and tubing are now being run to put the well on the beam. It is producing from the Bluff Creek sand, is 8 miles north of the Cook Pool, and may be considered a wildcat discovery, only one small producer having been completed in this area. Gas sand was logged from 1,406-19 feet and oil sand from 1,423-34 feet. The owners have 1,100 acres in the block.

Runs from the Wichita Falls district, for the week, averaged 61,620 bbls. per day.

PANHANDLE DISTRICT

Wheeler County, almost forgotten for the past four years, retains its active lead in drilling. Out of the 12 first reports for the district this week, 7 came from Wheeler County. There were six completions reported, all oil producers, three being in Hutchinson, one in Wheeler and two in Gray County. J. R. Phillips and others' No. 1 Lewis extended production a mile southeast of the Badger Pool in Hutchinson County, when it came in for around 500 bbls. It is in Section 7, Block 23, G.S.&F. Survey.

Production for the district averaged 59,190 bbls. per day, a slight decrease.

Phillips Petroleum Co. has spudded its 8,500-foot test in Section 157, Block 3-T, T.&N.O. Survey, Moore County. Extra heavy equipment has been installed. It is to be started with a 22-inch hole. The Lee Drilling Co. of Tulsa has the contract.

COMPLETIONS IN WEST TEXAS

Glasscock County

Noble Oil Co.'s No. 1 Pure-Lee, top pay 2,127-32 feet, initial production 1,514 bbls. per day, total depth 2,132 feet. Shell Petroleum Corp.'s No. 3 Phillips, top pay 2,140-2,372 feet, initial production 58 bbls. per hour, total depth 2,372 feet, treated with acid.

Howard County

Sun Oil Co.'s No. 6 Phillips, top pay 2,340-80 feet, initial production 512 bbls. in 24 hours, total depth 2,380 feet.

Pecos County

A. Faken's No. 1 Reed, pay 1,174-1,346 feet, initial production 6,334 bbls. per hour, total depth 1,346 feet. Mid-Kansas Oil & Gas Co.'s No. 34-B Yates, top pay 1,107-1,400 feet, initial production 1,993 bbls. per hour, total depth 1,440 feet.

Ward County

Atlantic Oil Producing Co.'s No. 17 Johnson, top pay 2,422-2,540 feet, initial production 267 bbls. flowing through tapered tubing, total depth 2,540 feet. Barnsdall Oil Co.'s No. 3 Henry, abandoned, total depth 2,076 feet. California Oil Co.'s No. 7 J. F. York, top pay 2,392-2,530 feet, initial production 73 bbls. flowing through tubing, total depth 2,530 feet.

Use of Butane as Rail Car Fuel Is Expanded

(Continued from Page 36)

consumption has been reduced from .024 gallon to .003 gallon per gallon of fuel consumed. Under the old system, lubricating oil of S.A.E. 70 was used but under the new setup the initial crankcase filling is S.A.E. 40 and S.A.E. 30 added from time to time as required to maintain the correct oil level. The crankcase is drained after 25,000 miles service but when using distillate as fuel it was found necessary to drain every 800 miles.

The ability to operate rail motor cars without obnoxious fumes and odors is a great achievement as it overcomes an objection that has prevailed ever since this type of railroad equipment came into horsepower, previously. Lubricating oil use. The Southern Pacific has received considerable favorable comment from the traveling public and from trainmen who operate the new motor car trains. The successful results of experimental work carried on during the past two years has proved so satisfactory that the company will soon make additional butane installations and within the next year, if present plans materialize, new equipment will be installed to use butane as fuel and a streamlined design adopted. The company anticipates a substantial improvement in operating efficiency when the present butane is used in conjunction with the streamline type of cars.

NEW YORK PRODUCERS ACT

OLEAN, N. Y., June 4.—The New York Oil Producers Association is actively supporting the Federal oil control bill and urged all operators of that district of the Pennsylvania Grade oil region to write to Congressman D. A. Reed, of Dunkirk, in favor of the bill's passage. D. J. Sweeney, of Buffalo, is president of the association, and with L. H. Thornton, of Wellsville, who is honorary chairman, is in Washington in the interests of this legislation.

ROCKY MOUNTAIN RUNS

Estimated daily average crude oil production for the week ending June 2 follows:

	Bbls.
WYOMING	
Salt Creek	18,280
Big Muddy	1,800
Badger Basin	40
Byron	shut in
Dallas Derby	600
Dutton Creek	80
Elk Basin	520
Ferris	20
Frannie	1,320
Garland	500
Grass Creek	1,270
Greybull	10
Hamilton Dome	630
Hudson	200
LaBarge	1,060
Lance Creek	320
Lost Soldier	1,520
Mule Creek	shut in
Midway	80
Notches	shut in
Oregon Basin	1,320
Osage	830
Pilot Butte	shut in
Rex Lake	shut in
Rock River	1,600
South Casper	shut in
Poison Spider	240
Teapot	30
Total Wyoming	32,870
MONTANA	
Buckley-Border	310
Cat Creek	650
Cut Bank	2,030
Dry Creek	shut in
Kevin-Sunburst	3,930
Lake Basin	50
Pondera	930
Total Montana	7,900
COLORADO	
Florence	190
Fort Collins and Wellington	500
Iles Dome	1,200
Moffat	510
Orchard	100
Rangely	90
Tow Creek	240
Total Colorado	2,830
NEW MEXICO	
Artesia	640
Cooper area	80
Empire area	0
Eunice area	1,940
Getty Pool	0
Hobbs	35,540
Hogback	180
Hospah	shut in
Jal	2,620
Lea area	1,700
Jackson	1,450
Maljamar	250
Rattlesnake	730
Table Mesa	90
Total New Mexico	45,220
Total Rocky Mountain region	88,820

East Central Texas Wildcats

(Continued from Page 40)

Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 5 Wills, 1,400 ft. from most northerly S line and 467 ft. from E line of tract, W offset to Barnsdall Oil Co.'s No. 1 Tubbs, Samuel Edmondson Sur. ..... Rig up.

CHEROKEE COUNTY

A. R. Lewis et al's No. 1 J. Bradford, 1,600 ft. from W line and 200 ft. from N line of 50-ac. tract, J. Laprelle Sur. ..... S.D. 2,825 ft.

A. F. Richardson's No. 1 P. Wood, 660 ft. from N line, 2,300 ft. from E line of 498-ac. tract, 14 miles E of Jacksonville, on Cherokee-Rusk County line, Ignacis Sanches Sur. ..... Derrick.

T. J. Wood et al's No. 1 New Birmingham, 660 ft. from S and E lines of 1,128-ac. tract, 7 miles SW of Rusk, Levi Jordan Sur. ..... T.D. 5,135 ft.; set csg. 5,116 ft.

FANNIN COUNTY

L. Kean et al's No. 1 L. M. Boyd, 900 ft. from E line and 300 ft. from N line of survey, W. Hunt Sur. .... Waiting on cmt. to set; T.D. 2,278 ft.

FRANKLIN COUNTY

Magnolia Petroleum Co.'s No. 1 A. P. Dupree, 330 ft. out of SE cor. of survey, 7 miles NE of Mt. Vernon, W. D. Talliferro Sur. ..... Derrick.

FREESTONE COUNTY

Clyde Creighton's No. 1 Holly Bros., 854 ft. from W and center N and S lines of lease, A.B.&M. Sur. ..... Coring sandy shale 5,148 ft.

Gholson et al's No. 1 E. M. and C. H. Watson, 1,460 varas from N line and 1,150 varas from W line of survey, 6 miles NE of Fairfield, R. D. Price Sur. ..... Location.

Trinity Farm Co.'s No. 1 N. R. Stewart, 1,866 ft. SW from NE line and 933 ft. SE from NW line of 1,920-ac. tract, R. M. Williamson Sur. ..... Location.

GREGG COUNTY

E. A. Lamb's No. 1 Clements, 500 ft. from W line and 1,880 ft. from N line of survey, G. A. Thomason Sur. ..... Derrick.

Sparkman and Reusch's No. 1 E. E. Stone, 1,000 ft. from E line and 330 ft. from N line of survey, M. Alexander Sur. ..... Derrick.

HENDERSON COUNTY

Big Bad Wolf Oil Co.'s No. 1 McCreary, 1,800 ft. from W line and 330 ft. from S line of survey, 6 miles S of Malakoff, W. H. Irvin Sur. ..... Derrick.

Gulf Production Co.'s No. 1 H. T. Gilliam (George Collins), 660 ft. from S and W lines of 100-ac. tract, J. L. Scott Sur. ..... Drlg. 1,830 ft.

HOPKINS COUNTY

D. A. Hale et al's No. 1 L. M. Hall, 200 ft. from N and E lines of 70-ac. tract, 1 mile SE of Miller Grove, A. Caro Sur. ..... Location.

HUNT COUNTY

G. S. & S. Co.'s No. 1 Oscar Popper, 2,670 varas from S line and 810 varas from E line of survey, 5 miles NW of Greenville, James Moore Sur. ..... Location.

KAUFMAN COUNTY

W. J. Lewis et al's No. 1 D. Clark, 430 ft. from S line and 660 ft. from E line of survey, 4¼ miles NW of Elmo ..... S.D. 400 ft.

LAMAR COUNTY

Cole et al's (formerly Optometrist Oil Club) No. 1 J. M. McFaddin, 450 ft. from S and W lines of E 25-ac. tract, 10 miles NW of Paris, Joseph Dick Sur. ..... S.D. 2,506 ft.

MORRIS COUNTY

Simpson et al's No. 1 Staggers, 800 ft. from S line of survey and 150 ft. from W line of lease, J. B. Nelson Survey ..... S.D. 2,330 ft.

LIMESTONE COUNTY

C. M. Joiner et al's No. 1 S. A. Knobb, 900 ft. from N line and 1,000 ft. from W line of survey, one-half mile N of Falls County line, Luke Moore Sur. ..... S.D. 1,700 ft.

J. Rodgers et al's No. 1 Vol DeLone, 1,516 ft. from W line and 600 ft. from N line of W 100-ac. tract, Pedro Varela Sur. ..... Shut down.

NACOGDOCHES COUNTY

Livingston Oil Co.'s No. 1 C. B. Watkins, 150 ft. from N line and 330 ft. from NW lines of 160-ac. tract, 3 miles S of Caro, H. Y. Bailey Sur. ..... Drlg. 400 ft.

NAVARRO COUNTY

W. J. Keeling et al's No. 1 J. F. Rushing, 484 ft. from N line and 150 ft. from W line of 184-ac. tract, 6 miles SW of Richardson, Henry Ford Sur. ..... Derrick.

J. B. Stoddard et al's No. 1 C. S. West estate, 1,000 ft. from W line and 650 ft. from N line of 643-ac. tract, Mathew Beron Sur., Abstract No. A-56 ..... Rigging up.

McCullough et al's No. 1 C. Berry, 330 ft. from SE cor. of 35-ac. tract, 1 mile W of Dawson, William Moss Sur. ..... Set csg. 20 ft.

Wheelock and Collins' No. 1 I. N. Cerf, 375 ft. from N line of lease and 1,050 ft. from W line of lease, James Smith Sur. No. 726 ..... Rig up.

RAINES COUNTY

J. W. Hallsell et al's No. 1 P. F. Jones, 400 ft. out of SW cor. of 32-ac. tract, 2¼ miles S of Alba, B.B. B.&C. Sur. ..... S.D. 2,100 ft.

RUSK COUNTY

Arnold and Shaw's No. 1 J. E. Arnold, 1,530 ft. from S line and 300 ft. from most southerly E line of survey, J. Crawford Sur. ..... Derrick.

George Hudson et al's No. 3 Jeff Phillips, 150 ft. from N line of survey and 700 ft. from W line of 100-ac. tract, 4 miles SE of Minden, N. Villaria Sur. .... S.D. 3,584 ft.

SMITH COUNTY

H. L. Hunt Production Co.'s No. 1 Henry Rayford, 330 ft. from E line and 200 ft. from N line of survey on 100-ac. tract, John L. Dillard Sur. ..... Coring 3,994 ft.

Preston Rose et al's No. 1 Elisha Wiggins, 2,300 ft. from W line and 330 ft. from S line of 640-ac. tract, 2 miles SW of Winona, F. H. K. Day Sur., Abstract No. 285 ..... Drlg. 1,165 ft.

UPSHUR COUNTY

Ben G. Barnett et al's No. 1 W. S. Jones, 200 ft. out of SW cor. of 100-ac. tract, 1½ miles NW of Jamestown, James N. Dunn Sur. ..... Drlg. 2,800 ft.

Virgil Hodges et al's No. 1 J. M. Floyd, 330 ft. from NE cor. of 136-ac. tract, 4 miles N of Gladewater, Railroad Sur. ..... S.D. 1,050 ft.

Lanier and Moore's No. 1 Vaughan, 230 ft. from S line and 330 ft. from W line of 100-ac. tract, 2 miles NW of Big Sandy, P. W. Standifer Sur. ..... Drlg. 1,042 ft.

Papadake et al's No. 1 L. L. Towery, 1,800 ft. N and 330 ft. E of SW cor. of survey, 5 miles N of Gladewater, W. L. Palmer Sur. ..... Coring 3,698 ft.

Randerson et al's No. 1 Nid Minor, 600 ft. from NW line and 1,800 ft. from NE line of tract, D. R. Cannon Sur. ..... Waiting on cmt. to set; T.D. 3,750 ft.

VAN ZANDT COUNTY

Germany et al's No. 1 C. S. Coker, 150 ft. out of SW cor. of 55-ac. tract, William Daniel Sur. ..... S.D. 1,208 ft.

Gillum and Allen et al's No. 1 A. T. Bass, 150 ft. from W. line and 150 ft. from N line of 10-ac. tract, William Hart Sur. ..... S.D. 3,660 ft.

Griffith Bros.' No. 1 Bruce, 1,000 ft. from S line and 330 ft. from E line of 134-ac. tract, G. Martinez Sur. ..... S.D. 1,562 ft.

Humble Oil & Refining Co.'s No. 3 S. R. Ray, 200 ft. N and 160 ft. W of SW cor. of Listenbee 30-ac. tract and on Ray 111.6-ac. tract, Nacogdoches County School Land Sur. ..... T.D. 1,257 ft.; showing oil.

Isaac et al's No. 1 C. F. Darrell, 330 ft. from S and W lines of 53-ac. tract, C. B. River Sur. ..... Drlg. 850 ft.

W. E. McKinney et al's No. 2 B. T. Davis, 285 ft. from N line and 235 ft. from W line of 13-ac. tract, J. Goodman Sur. ..... Testing 1,166 ft.

Miller et al's No. 1 J. M. Palmer, 150 ft. from S and E lines of 69-ac. tract, Nacogdoches County School Land Sur. ..... S.D. 94 ft.

Peden and Olson's No. 3 W. Banson, 600 ft. S of No. 2 and 140 ft. from W line of tract, J. Goodman Sur. ..... Location.

Pure Oil Co.'s No. 2 Ray, 250 ft. N of S line and 183 ft. W of E line of tract, Nacogdoches County School Land Sur, elev. 449.7 ft. ..... S.D. 1,216 ft.

Pure Oil Co.'s No. 9 W. T. Jarman, 1,576 feet N of S line and 250 ft. E of W line of W. T. Jarman 132.8-ac. tract, Nacogdoches School Land Sur. .... Running csg.; T.D. 2,793 ft.

Mrs. W. O. Smith et al's No. 1 Campbell, 1,700 ft. from N line and 300 ft. from E line of N. S. Bratcher Sur. ..... Set surface csg. 210 ft.

Wheeler et al's No. 1 Cade, 180 ft. from S line and 150 ft. from E line of 20-ac. tract, Nacogdoches County School Land Sur. ..... S.D. 240 ft.

Peden and Olsen's No. 1 J. M. Palmer, 200 ft. from E and N lines of south 2 acres of 94-ac. tract, Nacogdoches County School Land Sur. ..... Drlg. 1,002 ft.

WOOD COUNTY

Cauble and Thompson's No. 1-A N. G. Bobbett, 900 ft. from S line and 330 ft. from W line of tract, 2½ miles NW of Mineola, Daniel Fuller Sur. ..... S.D. 5,554 ft.

McElreath and Suggett's No. 1 B. D. Holley, 466 ft. from S and W lines of Holly tract, 3 miles SW of Winnsboro, James M. Moore Sur. ..... Coring 4,438 ft.

Alex Snyder et al's No. 1 T. Holmes, 200 ft. out of NE cor. of 122-ac. tract, 1½ miles SE of Hawkins, A. N. McKnight Sur. No. 399 ..... Rig up.

Wildcat Operations in West Texas

(Continued from Page 39)

Continental Oil Co.'s No. 2 O. B. Holt, 1,980 ft. from S line and 1,980 ft. from W line of Sec. 20, Blk. A, P.S.L. Sur. ..... Rig up.

C. J. Davidson et al's No. 1 Cole, 660 ft. from N line and 660 ft. from W line of Sec. 16, Blk. 45, Twp. 1s, T.&P. Sur. ..... Running csg.; T.D. 4,172 ft.

Harrison et al's No. 2 Addis, 990 ft. from N line and 2,200 ft. from W line of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur. ..... S.D. 3,836 ft.

Harrison et al's No. 3 Addis, 1,650 ft. from N line and 2,200 ft. from W line of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur. ..... Location.

Landreth Prod. Co.'s No. 2-A Texas Pacific Land Trust, 441 ft. from N line and 440 ft. from W line of Sec. 3, Blk. 43, Twp. 1s, T.&P. Sur. ..... Location.

Landreth Prod. Co.'s No. 1-B T. P. Land Trust, 2,200 ft from the S line and 440 ft. from the W line of Sec. 3, Blk. 43, Twp. 1s, T.&P. Sur. ..... Drlg. 3,100 ft.
Landreth Prod. Co.'s No. 2 O. B. Holt, 660 ft. from S and E lines of Sec. 15, Blk. 43, Twp. 1n, T.&P. Sur. ..... Rig up.
Landreth Prod. Co.'s No. 1 Clarence Scharbauer, 660 ft. from S and E lines of Sec. 20, Blk. 44, Twp. 1n., T.&P. Sur. ..... Set csg. 130 ft.
Landreth Prod. Co.'s No. 1 O. B. Holt, 1,980 ft. from S line and 660 ft. from E line of Sec. 19, Blk. A, P.S.L. Sur. ..... Drlg. 2,000 ft.
Landreth Prod. Co.'s No. 1 T. P. Land Trust Co., 440 ft. from N line and 2,200 ft. from W line of Sec. 3, Blk. 43, Twp. 1s, T.&P. Sur. ..... Flowed 530 bbls. in 24 hrs.; T.D. 4,200 ft.
McCurdy et al's No. 1 Foster, 330 ft. from S line and 440 ft. from W line of Sec. 36, Blk. 43, Twp. 2s, T.&P. Sur. ..... Filled 2,800 ft. with oil, then hi water at 4,282 ft.
Moran Drlg. Co.'s No. 1 Smith, 330 ft. from N line, 330 ft. from W line of Sec. 13, Blk. 43, Twp. 1s, T.&P. Sur. ..... **S.D. 4,425 ft.**
Stanolind Oil & Gas Co.'s No. 6 J. M. Cowden, 660 ft. from N and 660 ft. W of the SE cor. of Sec. 27, Blk. 43, Twp. 1n, T.&P. Sur. ..... Set csg. 3,980 ft.
Shell Pet. Corp.'s No. 3 Jones, 660 ft. from S line and 1,980 ft. from E line, Sec. 6, Blk. 44, Twp. 3s, T.&P. Sur. ..... Waiting on cmt. to set; T.D. 3,350 ft.
Skelly Oil Co.'s No. 1 Connell, 1,650 ft. from N line and 440 ft. from E line of Sec. 11, Blk. 16, P.S.L. Sur. ..... Drlg. 1,450 ft.
Stanolind O. & G. Co.'s No. 3 E. F. Cowden, 2,275½ ft. E and 330 ft. from S line, Sec. 26, Blk. 43, Twp. 2s, T.&P. Sur. ..... Running tubing; T.D. 4,172 ft.; flowed 157 bbls.
Texas Co.'s No. 10 W. E. Connell, 2,310 ft. from E line and 330 ft. from the S line of Sec. 1, Blk. B-16, P.S.L. Sur. ..... Derrick.
Fred Turner's No. 3-A Addis, 2,310 ft. from N and 440 ft. from E of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur. ... **Cellar.**
York-Harper et al's No. 1 Bates, 660 ft. from N and 660 ft. from E, Sec. 38, Blk. 44, Twp. 2s, T.&P. Sur... Drlg. 620 ft.

EDWARDS COUNTY

O. Houseman's No. 1 Turney, 1,650 ft. from N line and 330 ft. from W line of Sec. 176, C.C.S.D.& R.G.N.G. Sur. ..... Fishing 165 ft.
H. K. Sides' No. 1 Turney, 1,650 ft. from N line and 330 ft. from W line of Sec. 176, C.C.S.D.&R.G.N.G. Sur. ..... Drlg. 320 ft.

FISHER COUNTY

E. T. Campbell et al's No. 1 W. R. Bishop, 570 ft. from S and 150 ft. from E of NW cor. of Sec. 18, Blk. 21, T.&P. Sur. ..... Moving in.
Condor Pet. Co.'s No. 1 Herring, 450 ft. from S and 330 ft. from W line of Sec. 192, Blk. 1, B.B.B.&C. Sur. ..... T.D. 3,107 ft.; lime 3,100-07 ft.; will treat with acid.
Condor Pet. Co.'s No. 2 Wilson, 440 ft. from N and 2,310 ft. from W line of Sec. 6, Blk. R, W. E. Richardson Sur. ..... Rig up.
Roeser & Pendleton's No. 2 Frank Steele, 1,470 ft. from S and 990 ft. from W line of Sec. 210, Blk. 1, B.B.B.&C. Sur. ..... T.D. 3,196 ft.; treated with acid.
Sinclair Prairie Oil Co.'s No. 3 Frank Steele, 990 ft. from N and 330 ft. from E line of Sec. 73, Blk. 1, H.&T.C. Sur. ..... Flowed 30 bbls. per hour.
Southern's No. 1 King, 660 ft. from N and 330 ft. from W line of SW Sec. 194, B.B.B.&C. Sur. ..... T.D. 3,128 ft.; plugged back to 3,105 f.; treated with acid.
Stanolind Oil & Gas Co.'s No. 5 Steele, 1,170 ft. from S and 990 ft. from W line of Sec. 210, Blk. 1, B.B.B.&C. Sur. ..... T.D. 3,080 ft.; show of oil 2,920-3,025 ft. and 3,050-80 ft.
Texas Co.'s No. 2-B Teagarden, 990 ft. from S and 330 ft. E of NW cor. of S half of Sec. 9, Blk. 8, W. E. Richardson Sur. ..... Slush pit.
Texas Co.'s No. 1 First National Bank of Rotan, 330 ft. N and E of the NW cor. of Sec. 210, B.B.B.&C. Sur. ..... Drlg. 950 ft.

GLASSCOCK COUNTY

Steve Currie et al's No. 1 Turner, 330 ft. from N line and 330 ft. from E line of Sec. 19, Blk. 33, Twp. 2s, T.&P. Sur. ..... Waiting on cmt. to set 1,575 ft.
Steve Currie et al's No. 1 Underwood, 660 ft. from N line and 660 ft. from E line of Sec. 24, Blk. 3, Twp. 4s, T.&P. Sur. ..... Location.
Empire Gas & Fuel Co.'s No. 3 G. T. Hall, 330 ft. from the N line and 990 ft. from the W line of Sec. 21, Blk. 33, Twp. 2s, T.&P. Sur. ..... Drlg. 1,050 ft.
John I. Moore et al's No. 1 J. S. McDowell, 1,980 ft. from N line and 660 ft. from E line of Sec. 32, Blk. 34, Twp. 2s, T.&P. Sur. ..... Standardizing; T.D. 2,193 ft.
Noble Drlg. Co.'s No. 2 W. P. Edwards, 330 ft. from the S line and 330 ft. from the W line of Sec. 17, Blk. 33, Twp. 2s, T.&P. Sur. ..... Drlg. 1,820 ft.
Simms Oil Co.'s No. 2 W. P. Edwards, 330 ft. from S and 990 ft. from E of Sec. 18, Blk. 33, Twp. 2s, T.&P. Sur. ..... Drlg. 2,150 ft.
Simms Pet. Co.'s No. 3 W. P. Edwards, 330 ft. from E line, 1,358 ft. from S line, Sec. 18, Blk. 33, Twp. 2s, T.&P. Sur. ..... Location.
Tribal Oil Co.'s No. 5 M. M. Edwards, 330 ft. from S line and 990 ft. from the W line of Sec. 16, Blk. 33, Twp. 2s, T.&P. Sur. ..... Drlg. 1,200 ft.

HOWARD COUNTY

Humble Oil & Ref. Co.'s No. 3 W. R. Settles, 1,650 ft. from W line and 330 ft. from the S line of Sec. 133, Blk. 29, W.&N.W. Sur. ..... Fishing 2,301 ft.
Merrick & Lamb's No. 12 Chalk, 2,310 ft. from N line, 330 ft. from W line, Sec. 125, Blk. 29, W.&N.W. Sur... Location.
California Oil Co.'s No. 1 A. M. Bell, 465 ft. from W line and 1,915 ft. from E line of Sec. 12, Blk. 30, Twp. 1s, T.&P. Sur. ..... Moving in material.
California Oil Co.'s No. 1 Dodge, 1,915 ft. from E line and 465 ft. from S line of Sec. 1, Blk. 30, T.&P. Sur... Moving in material.
Continental Oil Co.'s No. 2 Gilbreath, 330 ft. from N line and 660 ft. from E line of Sec. 24, Blk. 33, Twp. 2s, T.&P. Sur. ..... Location.
Continental Oil Co.'s No. 9 Settles, 330 ft. from N line and 990 ft. from W line of Sec. 133, Blk. 29, W.&N.W. Sur. ..... Spud.
Dorn et al's No. 1-B Davis, 2,310 ft. from N line and 2,310 ft. from W line of Sec. 2, Blk. 30, Twp. 1s, T.&P. Sur. ..... Rig up.
L. C. Harrison et al's No. 2 Texas Land & Mortgage Co., 2,310 ft. from E line and 330 ft. from the S line of Sec. 4, Blk. 30, Twp. 1s, T.&P. Sur. ..... Derrick.
Plymouth Oil Co.'s No. 11 Kloh, 1,320 ft. from S line and 660 ft. from W line of Sec. 5, Blk. 32, Twp. 2s, T.&P. Sur. ..... Drlg. 800 ft.
Permian Pacific Pet. Co.'s No. 1 Cappa, 330 ft. from SW cor. of Sec. 17, Blk. 29, Twp. 1n, T.&P. Sur. ..... **Location.**
Plymouth Oil Co.'s No. 10 Kloh, 660 ft. from S line and 660 ft. from W line of Sec. 5, Blk. 32, Twp. 2s, T.&P. Sur. ..... Drlg. 2,356 ft.
Joe Rusk et al's No. 2 G. M. Dodge, 330 ft. from the N line, 330 ft. from the E line, Sec. 9, Blk. 30, Twp. 1s, T.&P. Sur. ..... Rig up.
Sinclair Prairie Oil Co.'s No. 12 Dodge, 330 ft. from S line and 2,340 ft. from W line, Sec. 11, Blk. 30, Twp. 1s, T.&P. Sur. ..... Drlg. 800 ft.
Southern Oil Co.'s No. 1 Frazier, 660 ft. from S line and 660 ft. from W line of Sec. 4, Blk. 33, Twp. 10s, T.&P. Sur. ..... Spudded.

IRION COUNTY

S. E. Colgin's No. 1 Tankersley, 550 ft. from E of river and 150 ft. from S line of Sec. 723, H. J. Voelker Sur. ..... Spudded.
Melrose Oil Co.'s No. 1 J. D. Sugg, 1,700 ft. from the E line and 308 ft. from the S line of Sec. 25, Blk. 2, E.&T.C. Sur. ..... Spudded and S.D.
Williams-Short's No. 1 Gentry, 2,200 ft. from N line and 2,080 ft. from W line of Sec. 1, Blk. 3, H.&T.C. Sur... **S.D. 835 ft.**

JONES COUNTY

C. P. Campbell's No. 3 Herndon, 1,450 ft. from S line and 800 ft. from W line, Sec. 6, M.E.P.&P. Sur. ..... S.D. 2,497 ft.
Clifton ⅝ Brazelton et al's No. 1 Cassey, 200 ft. from N and W lines of SE cor. of Sec. 15, Blk. 15, T.&P. Sur. ..... Drlg. 800 ft.
Elmer Close et al's No. 1 A. B. Faulks, 330 ft. from N line and 330 ft. from W line of Subdiv. No. 27, Henry Millard Sur. ..... Drlg. 2,050 ft.
Condor Pet. Co.'s No. 2 Sayles, 650 ft. from N line and 960 ft. from W line of Sec. 3, Blk. 20, T.&P. Sur. ... T.D. 1,908 ft.; est. 600 bbls.
Guthrie & Lancaster's No. 1-B Campbell, 330 ft. from N and 2,276 ft. from E line of Sec. 15, Blk. 19, T.&P. Sur. ..... Underreaming; T.D. 915 ft.
Southern Oil Corp.'s No. 2 Williams, 330 ft. from S and W line of Sec. 17, Blk. 19, T.&P. Sur. ..... Underreaming; T.D. 950 ft.

LOVING COUNTY

R. L. Allen's No. 2 fee, 4,290 ft. from NE line, 990 ft. from SE line, Sec. 82, Blk. 33, H.&T.C. Sur. ..... **Location.**
R. L. Allen's No. 3 fee, 4,290 ft. from NE line, 990 ft. from NW line, Sec. 82, Blk. 33, H.&T.C. Sur. ..... **Location.**
R. L. Allen's No. 4 fee, 4,290 ft. from NE line, 330 ft. from NW line, Sec. 82, Blk. 33, H.&T.C. Sur. ..... **Location.**
The California Oil Co.'s No. 8 Reagan-McElvain, 330 ft. from NW and SW lines of Sec. 84, Blk. 1, W.&N.W. Sur. ..... Drlg. 2,300 ft.
Eppenauer Drlg. Co.'s No. 2 Hammill & Ellis, 410 ft. from NW and 796 ft. from NE lines of Sec. 2, Blk. 1, W.&N.W. Sur. ..... Cellar.
H. W. Martin's No. 4 Wheat, Ramsey, 990 ft. from SE and SW lines of Sec. 82, Blk. 1, W.&N.W. Sur. ..... Drlg.
Sinclair Prairie Oil Co.'s No. 2 Bell, 410 ft. from SE and 1,025 ft. from NE of Sec. 91, Blk. 1, W.&N.W. Sur. ..... T.D. 4,267 ft.; swabbing 180 bbls.
J. F. Slack's No. 1 Covey, 2,310 ft. from NE line and 330 ft. from SE line of Sec. 3, Blk. 2, W.&N.W. Sur... S.D. 260 ft.

PECOS COUNTY

Mack T. Anderson's No. 1 McKenzie, 660 ft. from S line and 660 ft. from W line of Sec. 1, Blk. 604 ..... 2,000 ft. of oil in hole; T.D. 1,31 ft.
Cardinal Oil Co.'s No. 17-E Tippett, 150 ft. from E line of W half and 730 ft. from N of No. 5-E, Sec. 40, Blk. 194, G.C.&S.F. Sur. ..... Waiting on orders; T.D. 481 ft.
Culberson Bros.'s No. 15-B Monroe, 725 ft. from N line and 1,320 ft. from E line of Sec. 39, Blk. 194, G.C.&S.F. Sur. ..... **Location.**
Humble Oil & Ref. Co.'s No. 1 White, Baker, 1,320 ft from 29 and E lines of Sec. 44, Blk. Z, T.C. Sur. ..... Drlg. 9,632 ft.
C. S. Messenger's No. 2 Rand Jones, 1,935 ft. from S line and 1,013 ft. from W line of Sec. 5, Blk. 9, H.&G.N. Sur. ..... Rig up.
Mid-Kansas Oil & Gas Co.'s No. 18 Smith-Taylor, 1,296 ft. from S line, 1,320 ft. from W line, Sec. 33, Blk. 194, G.C.&S.F. Sur. ..... **Location.**
Mid-Kansas Oil & Gas Co.'s No. 24 Smith-Taylor, 350 ft. W of S half of Turner Tract No. 1, Sec. 33, Blk. 194, G.C.&S.F. Sur. ..... **Road.**
Mid-Kansas Oil & Gas Co.'s No. 25 Smith-Taylor, 344 ft. W of SE cor. of S half of Turner Trace No. 1, Sec. 33 ..... **S.D. 750 ft.**
Mid-Kansas Oil & Gas Co.'s No. 26 Smith-Taylor, 395 ft. S and 344 ft. E of SE cor. of S half of Tract No. 1 ..... **Cellar.**
Mid-Kansas Oil & Gas Co.'s No. 1 Turner, 350 ft. from N line and 350 ft. from W line of Turner Sur. No. 2.. **S.D. 590 ft.**
Mid-Kansas Oil & Gas Co.'s No. 12-H Yates, 408 ft. S of N line of Sec. 32 and 344 ft. W of SE cor. of S half of Tract No. 1 ..... **Location.**
Mid-Kansas Oil & Gas Co.'s No. 13-H Yates, 408 ft. S of N line of Sec. 32 and 344 ft. E of SE cor. of S half of Tract No. 1 ..... **Location.**
Mid-Kansas Oil & Gas Co.'s No. 38-A Yates, 250 ft. E and 305 ft. S from the NE cor. of Turner Tract No. 3 in Sec. 34½, I. G. Yates Sur. ..... **Location.**
Mid-Kansas Oil & Gas Co.'s No. 39-A Yates, 150 ft. N and 250 ft. W of the NW cor. of Turner tract No. 4, in Sec. 34½, I. G. Yates Sur. ..... **Cellar.**
Mid-Kansas Oil & Gas Co.'s No. 40-A Yates, 344 ft. from E line and 395 ft. from N of SE cor. of S half of Turner Tract No. 1 ..... **S.D. 680 ft.**
Mid-Kansas Oil & Gas Co.'s No. 34-B Yates, 1,085 ft. from N line and 498 ft. from W line of Sec. 61, I.&G.N. Sur. ..... **S.D. 1,107 ft.**
Simms Pet. Co.'s No. 3 A. J. Devlin, 330 ft. from the N line and 330 ft. from the E line of the most easterly NE cor. of Sec. 2, John D. Duval Sur., Abst. No. 3,834 ..... **Location.**
Tex-Mex Pet. Co.'s No. 1 Netterville, 5,610 ft. from S and 330 ft. from W of Sec. 59, Blk. 8, H.&G.N. Sur... Rig up.
Trans-Texas Oil Co.'s No. 1 Caldwell, 330 ft. from E line and 330 ft. from S line of Sec. 27, Blk. 40, Twp. 9, T.&P. Sur. ..... S.D. 340 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 15-C University, Sec. 12, Blk. 2... Drlg. 3,000 ft.
E. P. Kirschner and White's No. 1 W. A. White and McIntosh, 720 ft. from E and 800 ft. from N of Sec. 1,223, H.L.R.R. Sur. ..... T.D. 3,200 ft.

REEVES COUNTY

Grisham-Hunter Corp.'s No. 1 fee, 1,320 ft. from N line, 1,320 ft. from the E line of Sec. 10, Blk. 50, Twp. 8, T.&P. Sur. ..... S.D. 3,570 ft.
Hugo Freels' No. 1 B. Greenman, 330 ft. from NE line and 331 ft. from SE line of Sec. 21, Blk. 2, H.&G.N. Sur. ..... Shot 220 qts. from 3,775-3,980 ft.; no results; S.D.; T.D. 3,985 ft.
C. H. Lockhart et al's No. 1 W. D. Johnson, 330 ft. from N line and 330 ft. from W line of Sec. 3, Blk. C-12, P.S.L. Sur. ..... Moving in material.

RUNNELS COUNTY

Agnew & Sons' No. 2 Fowler, 1,165 ft. from S and 150 ft. from W of NE cor. of Blk. 33, N. Travis Sur. ..... S.D. 2,559 ft.; tested 1 bbl. of oil and 25 bbls. of S.W. in 24 hrs.
Agnew and Currie's No. 1 H. E. Wade, 2,640 ft. from N line and 330 ft. from E line of Sec. 24, Domingo Diaz Sur. No. 533 ..... Set surface csg.; T.D. 33 ft.
Anderson et al's No. 1 W. F. James, 330 ft. from N and W lines of Subdiv. No. 20, Norvell Travis Sur. ..... Spudded and S.D.
Castor & Anderson et al's No. 1 W. F. James, 174 ft. from W line of Subd. No. 36, Norvell Travis Sur. No. 533 ..... S.D. 910 ft.
Melrose Oil Co.'s No. 1 L. P. Woods, 150 ft. from NE lines and 3,475 ft. from W line of survey, Willett Holmes Sur. No. 100 ..... T.D. 1,429 ft.

W. S. Sawyer et al's No. 1 Giesecke, 1,311 ft. from N and 4,606 ft. from E lines of survey, Blk. 131, James Hughes Sur. ..... T.D. 2,033 ft.; showing oil and gas.

Prairie Oil & Gas Co.'s No. 1 T. B. Wade, 3,597 ft. from N and 3,140 ft. from E line of Subdiv. No. 10, Nervel Travis Sur. ..... Drlg. 2,400 ft.

R. Tucker et al's No. 5 McMillan, 350 ft. from N and W lines of that part of Subd. No. 22 in the D. Diaz Sur. ..... Drlg. 2,000 ft.

F. D. Williams' No. 1 J. L. Elkins, 2,325 ft. from E and 1,300 ft. N of SW cor. of Blk. 12, but in Blk. 13, N. Travis Sur. No. 533 ..... S.D. 1,400 ft.

SCHLEICHER COUNTY

John M. Cooper et al's No. 1 Bert Page, 1,290 ft. from N line, 1,470 ft. from W line of Sec. 40, Blk. L, G.H.&S.A. Sur. (old well being drilled deeper) ..... S.D. 5,404 ft.; 1,250,000 ft. of gas

TERRELL COUNTY

W. A. Sudderth's No. 1 Phelps, 2,157 ft. from N line and 2,482 ft. from the W line of Sec. 5, Blk. 4-A, G. W. Turley Sur. ..... S.D. 5,635 ft.

UPTON COUNTY

Broderick & Calvert's No. 1 Homer Trust & Savings Bank, 1,980 ft. from N line, 660 ft. from W line, Sec. 22, Blk. B-42, Twp. 4s, T.&P. Sur. ..... Location.

Gulf Prod. Co.'s No. 103 McElroy, 1,980 ft. from S and 660 ft. from W, Sec. 197, Blk. F, C.C.S.D.&R.G.N.G. Sur. ..... Drlg. 10,275 ft.

Texas Pacific Coal & Oil Co. and Humble Oil & Ref. Co.'s No. 13 J. H. Shirk, 990 ft. from the S line and 330 ft. from the E line of Sec. 1, Blk. 3, M.K.&T. Sur. ..... Drlg. 2,370 ft.

Texas Pacific Coal & Oil Co.'s No. 3-D J. F. Land, 990 ft. from S line and 990 ft. from W line of Sec. 36, Blk. 1, M.K.&T. Sur. ..... Moving in material.

Theabotal Oil Co.'s No. 3 J. F. Lane, 1,650 ft. from N and 990 ft. from E of Sec. 36, Blk. 1, M.K.&T. Sur. ..... S.D. 250 ft.

Williams & Williams Drlg. Co.'s No. 1 Robbins, 1,600 ft. from S and 1,900 ft. from E, Sec. 4, G.C.&S.F. Sur... S.D. 1,987 ft.

VAL VERDE COUNTY

South-Western Exploration Co.'s No. 1 E. K. Fawcett, 2,310 ft. from S and 2,310 ft. from E, Sec. 14, Blk. L, G.C.&S.F. Sur. ..... Rig up.

WARD COUNTY

Alexander's No. 1 Richter, 1,650 ft. from NW, 1,170 ft. from NE line of Sec. 27, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,750 ft.

Atlantic Oil & Prod. Co.'s No. 18 W. D. Johnson, 1,650 ft. from the NE line of Sec. 9, Blk. 34, H.&T.C. Sur... S.D. 1,450 ft.

L. G. Bradstreet et al's No. 1 Lee Monroe, 2,310 ft. from NE and 330 ft. from SE lines of Sec. 77, Blk. 34, H.&T.C. Sur. ..... S.D. 1,037 ft.

California Oil Co.'s No. 3 D. Durgin, 1,650 ft. from SW line, 2,310 ft. from SE lines of Sec. 15, H.&T.C. Sur... Location.

California Oil Co.'s No. 8 York, 990 ft. from N and 2,310 ft. from SW of Sec. 10, Blk. 34, H.&T.C. Sur... Location.

C. C. Duffey et al's No. 1 Llano-Sloan, 1,650 ft. from NW and NE lines of Sec. 24, H.&T.C. Sur. ..... S.D. 2,132 ft.

Farrell & Co.'s No. 3 John B. Bennett, 1,650 ft. from SE line, 330 ft. from NE line of Sec. 16, Blk. 34, H.&T.C. Sur. ..... Location.

Gulf Prod. Co.'s No. 28 Hutchins, 2,310 ft. from S line and 330 ft. from W line of Sec. 4, Blk. F, G.M.M. B.&A. Sur. ..... Drlg. 2,715 ft.

Gulf Prod. Co.'s No. 30 Hutchins, 990 ft. from S line and 330 ft. from W line of Sec. 4, Blk. F, G.M.M. B.&A. Sur. ..... Location.

Gulf Prod. Co.'s No. 45 O'Brien, 1,650 ft. from S line and 330 ft. from E line of Sec. 17, Blk. F, G.M.M. B.&A. Sur. ..... Drlg. 2,605 ft.

Gulf Prod. Co.'s No. 46 O'Brien, 1,650 ft. from S line and 990 ft. from E line of Sec. 17, Blk. F, G.M.M. B.&A. Sur. ..... Drlg. 2,655 ft.

Gulf Prod. Co.'s No. 47 O'Brien, 330 ft. from E and 990 ft. from S, Sec. 17, Blk. F, G.M.M.B.&A. Sur. ..... Rig up.

Gulf Prod. Co.'s No. 48 O'Brien, 990 ft. from E line and 990 ft. from S line of Sec. 17, Blk. F, G.M.M.B.&A. Sur. ..... Cellar.

Humble Oil & Ref. Co.'s No. 3 Richter, 2,316 ft. from NE line and 1,698 ft. from SE line of Sec. 27, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,620 ft.

Rector Oil Co.'s No. 1 Lee Monroe, 660 ft. from NE and 660 ft. from SE of Sec. 62, Blk. 32, H.&T.C. Sur... S.D. 4,661 ft.

Richardson's No. 1 Johnson, 330 ft. from NE line and 2,310 ft. from NW line of Sec. 22, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,400 ft.

Sid Richardson's No. 1 Lee Monroe, beginning at the NE cor. of J. W. Hollingsworth Sur. No. 4, thence 440 ft. SE, thence NE 430 ft., J. W. Jackson Sur. No. 55 ..... Location.

Sinclair Prairie Oil Co.'s No. 5 Archenhold, 2,310 ft. from SE and 2,310 ft. from SW of Sec. 32, Blk. 5, H.&T.C. Sur. ..... Drlg. 2,400 ft.

Tex-Mex Pet. Corp.'s No.2-B Shell-Sloan, 2,310 ft. from NE and 990 ft. from NW, Sec. 16, Blk. 5, H.&T.C. Sur. ..... Cellar.

Tex-Mex Pet. Corp. et al's No. 2 Cal-Archenhold, 990 ft. from NE and 330 ft. from SE, Sec. 28, Blk. 5, H.&T.C. Sur. ..... T.D. 2,968 ft.

Tex-Mex Oil Co.'s No. 2-B Shell-Sloan, 1,650 ft. from NE and 330 ft. from NW lines of Sec. 16, Blk. 5, H.&T.C. Sur. ..... Drlg. 2,710 ft.

Westex Oil Co.'s No. 1 Cynthia Monroe et al, 330 ft. from SE and 330 ft. from SW lines of NE 80 acres of Sec. 2, J. V. Borders Sur. ..... Drlg. 2,310 ft.

WINKLER COUNTY

Magnolia Pet. Co.'s No. 5 Scarborough, 1,650 ft. from N line and 370 ft. from E line of Sec. 18, Blk. 74, P.S.L. Sur. ..... Drlg. 2,720 ft.

McCurdy & Easter's No. 1 Scarborough, 1,650 ft. from W and 2,310 ft. from S, Sec. 1, Blk. 77, P.S.L. Sur... Rigging up and S.D.

Magnolia Pet. Co.'s No. 6 Scarborough, 1,650 ft. from S line and 330 ft. from W line of Sec. 4, Blk. 22-C, P.S.L. Sur. ..... Cellar.

Magnolia Pet. Co.'s No. 7 Scarborough, 1,650 ft. from N line and 990 ft. from E line of Sec. 18, Blk. 7, P.S.L. Sur. ..... Location.

Sid Richardson's No. 5-A Scarborough, 330 ft. from W and 190 ft. from S, Sec. 1, Blk. 22-C, P.S.L. Sur. ..... Moving in machine

Richardson et al's No. 3 Scarborough, 150 ft. from S line and 2,310 ft. from W line of Sec. 1, Blk. C-22, P.S.L. Sur. ..... Drlg. 2,815 ft.

Richardson's No. 4 Scarborough, 330 ft. from N line and 2,310 ft. from W line of Sec. 1, Blk. 77, P.S.L. Sur... Set csg.: T.D. 2,541 ft.

Richardson's No. 6 Scarborough, 330 ft. from N line and 2,310 ft. from W line, Sec. 18, Blk. 174, P.S.L. Sur. .. Drlg. 1,405 ft.

Richardson's No. 5 Scarborough, 150 ft. from S line and 1,740 ft. from W line of Sec. 1, Blk. C-22, P.S.L. Sur. ..... T.D. 1,270 ft.

Sinclair Prairie Oil Co.'s No. 2-C State-Scarborough, 102 ft. N and 1,650 ft. W of NE cor. of Sec. 1, Blk. 77, P.S.L. Sur. ..... Drlg. 2,915 ft.

Sinclair Prairie Oil Co.'s No. 3 W. F. Scarborough, 102 ft. from the N line, 1,650 ft. from E line, Sec. 1, Blk. 77, P.S.L. Sur. ..... Location.

Tide Water Oil Co.'s No. 2 Scarborough, 105 ft. from S line and 990 ft. from E line of Sec. 1, Blk. C-22, P.S.L. Sur. ..... T.D. 3,016 ft.; shot 60 qts. at 2,940-3,970 ft.

Wildcat Operations in Southwest Texas

(Continued from Page 38)

Houston Oil Co.'s No. 1-B Neihaus, 330 ft. from N and E line of 100-ac. tract ..... T.D. 3,644 ft.; flowed 500 bbls. first day.

Hibert Jeanes' No. 1 G. L. Courtney, 1,600 ft. from E line, 330 ft. from S line of tract, G. A. Kerr Sur., 1½ miles NE of Pettus ..... Rigging up.

McLain et al's No. 2 Laura Weiss, B.&B. Sur., 660 ft. E of No. 1 ..... T.D. 100 ft.; prep. to start up.

Phillips Pet. Co.'s No. 1 Morgan, 4,950 ft. from W, 3,270 ft. from N lines of 13,930-ac. tract, Eyles Sur. T.D. 6,090 ft.; Schlumberger showed 3 shows between 4,200 and 4,600 ft.

BELL COUNTY

Gus Winston et al's No. 3 Warrick, 100 ft. N of James Scroggins' No. 1 Warrick, in Elijah Ingram Sur. ..S.D. 3,308 ft.

BEXAR COUNTY

Joe Beckley's No. 1 fee, 3,100 ft. W and 150 ft. S at right angles from most northerly cor. of Morales Sur. (2 mi. SW of San Antonio) ..... Drlg. lime 1,270 ft.

A. M. Blume's No. 1 H. A. Ridder, E offset to Blume's No. 2 Ridder, J. M. Barrera Sur. ..... Derrick blew down.

A. M. Blume's No. 2 Louis Ridder, approximately 2,350 ft. N of R.R., 700 ft. E of W line of J. M. Baerera Sur. No. 58 ..... T.D. 1,630 ft.; P.B. to test 1,430 ft.

J. G. Bowles' No. 1 Dillon, 750 ft. from road on E and 4,750 ft. from S line of survey, Manuel Delund Sur... Location.

Keiffer et al's No. 1 Ruiz, SE cor. of 52-ac. tract in F. Rowland Sur. No. 48 ..... T.D. 1,715 ft.; S.D.

Dingman & Russell's No. 1 R. J. Coffey, 1,228 ft. from SE line, 1,086 ft. from SW line of 420-acre tract in Rodrigues Sur. ..... T.D. 1,326 ft.; P.B. 1,017 ft.; bailing.

S. E. Gantt's No. 1 A. B. Stephen, 2,650 ft. from SW line, 740 ft. from SE line of P. W. Hays Sur. .... T.D. 452 ft.; S.D.

Thos. Gorton's No. 1 Edward Jackel, 600 ft. from N line, 800 ft. from E line of tract in J. Ward Sur. ..T.D. 500 ft.; S.D.

George L. O'Neill's No. 1 Neimann in Juan Montes Sur. No. 6 ..... T.D. 1,425 ft.; bailing.

J. W. Johnson's No. 1 Willow Springs, 150 ft. from N and W lines of lease in B. Munos Sur. No. 151..... T.D. 1,940 ft.; S.D.; made salt wtr. and some oil.

Fred A. Perrenot's No. 1 Russell, 750 varas from NE line, 54 varas from NW line of 500-ac. tract in Rodrigues Sur. ..... T.D. 1,315 ft.; standing.

N. H. Price's No. 1 Barragas, 150 ft. from S and E lines of 60-ac. tract ..... T.D. 419 ft.; S.D.; to be comp. by H. E. Lewis.

Schneider & Reese's No. 1 Claussen ..... S.D. 1,675 ft.

C. A. Smith's No. 1 Henry Lamb, 750 ft. from N and E lines of Lamb farm, in de la Garza grant ..... T.D. 982 ft.; show of oil and gas from 968-82 ft.; W.O.C.

Trawalter Oil Co.'s No. 2 fee, Jett Sur. ..... T.D. 1,660 ft.; S.D.

BURLESON COUNTY

Berry & Hayes' No. 1 C. W. Young, 150 ft. from SW line and 780 ft. from SE line of 140-ac. tract in Bird Sur. (7 mi. SE of Caldwell) ..... T.D. 309 ft.; S.D.

CALDWELL COUNTY

S. S. Cargill's No. 3 Dameresu, 150 ft. from W line, 450 ft. from N line of D. Cooper Sur. ..... T.D. 2,261 ft.; top Edwards 2,-260 ft.; show oil; fishing.

F. H. Etheridge et al's No. 1 Perry, 300 ft. from SE line and 300 ft. from NE line of 27-ac. lease in P. Martines Sur. (N of Lytton Springs) ..... Rigging up and S.D.

Wilford Keen et al's No. 1 Wm. Ewalk, 150 ft. from E line and 150 ft. from N line of 126-ac. tract, or 1,650 ft. from N and 1,300 ft. from E lines of Jas. George Sur. (2½ mi. from Lockhart) ..... T.D. 2,228 ft.; S.D.

J. Edward Mills et al's No. 1 Emma Johnson, 1,650 ft. from N line and 4,250 ft. from W line of Jas. Pinchback Sur. (6 mi. SE of Lockhart) ..... Sand 2,111 ft.; slight show oil; treated with 1,000 gals. acid.

CALHOUN COUNTY

Continental Oil Co.'s No. 1 American Natl. Realty Co., center of NE of Sec. 6, Blk. C, Calhoun Cattle Co., Subd. of Port O'Connor pasture (9 mi. SE of Seadrift) ..... Drlg. 900 ft.

Heep Oil Corp.'s No. 1 P. Welder, J. M. Rice Sur. ..... Drlg. gumbo 6,235 ft.

Heep Oil Corp.'s No. 2 P. Welder, Day Land & Cattle Co., A-338, center of Sur., 2¾ mi. W of SW of McKinney, 650 ft. NW line and 3,950 ft. SW line of Sur. (4 mi. W of Clark) ..... Drlg. shale 1,800 ft.

DEWITT COUNTY

Keystone Royalties' No. 1 L. T. Burns, 1,100 ft. from W and 600 ft. from S line of 303-ac. tract in L. G. Belcher Sur. ..... Rigging up.

Slick-Urschel No. 4 Potter, 3,170 ft. from SE line of 591-acre tract, 990 ft. SE of No. 3..... Set surface csg.

DUVAL COUNTY

Beer & Lewis' No. 1 Peters, Sur. 27 ..... Rigging up.

Buffalo-Texas Drlg. Synd., Inc.'s No. 1 Escobar, 700 varas from W line, 1,000 varas from N line of 920-ac. tract in Francisco grant ..... T.D. 2,557 ft.; S.D.

Dr. J. H. Butte et al's No. 1 Tom Graham, 1,122 ft. N line, 3,375 ft. W line, Sec. 572, E. line of county and N line of San Diego ..... Location.

Continental Oil Co.'s No. 2-A Clara, Driscoll Sevier, 3,675 ft. S and 1,000 ft. from E line of Sec. 448 ..... Location.

W. C. McBride's No. 1 Hagist, 330 from N and E lines of SE 80 ac. of Sec. 1 ..... Location.

J. R. B. Moore's No. 1 W. R. Peters, Survey 36..... Rigging up.

G. C. Mortimer's No. 1-B Peters, 330 ft. N and W lines of SW¼ of Sur. 196 ..... Drlg. 875 ft.

O'Byrne & Jennings' No. 1 Benavides, 3,734 ft. from S cor. and 330 ft. from W line at right angles, Sur. 355 Moving in

South Coast Oil Co.'s No. 1 C. M. Robinson, Sec. 114 .... Abandoned.

Sun Oil Co.'s No. 1 Moreno, 330 ft. from E line and 2,000 ft. from S line of NW cor. of H.&W. Sur. 537, in Sec. 540 (5 mi. S of San Diego) ..... Drlg. 3,250 ft.

Witherspoon et al's No. 1, Richardson Sur. No. 5 ..... T.D. 1,005 ft.; S.D.

Louis Yeager's No. 1 Yeager, 694 ft. from W line, 1,527 ft. from S line of Sur. No. 38 ..... T.D. 365 ft.; S.D.

EDWARDS COUNTY

Love and Evans' No. 1 Steve Brown, 660 ft. from N and E lines of Sec. 66, G.W.T.&P.R.R. Sur., 15 miles W of Rock Springs ..... S.D. 3,002 ft.

FRIO COUNTY

Amerada Pet. Co.'s No. 2 Halff & Oppenheimer, begin. at most easterly N cor. of John H. Gibson Sur. No. 16, thence SE along NE line of Sur. 2,100 ft., thence SW at right angles 800 ft. (4 mi. SW of Pearsall) Drlg. 4,825 ft.

GILLESPIE COUNTY

Dorre et al's No. 3 Lindig ..... Drlg. 137 ft.; cing out.

Powers et al's No. 2 Lindig, 12,700 ft. from S line, 1,333 ft. from W line of Maria Josephine Guerrera Sur. ..... Location.

GOLIAD COUNTY

H. H. Weinert's No. 1 Grady Smith, 330 ft. from NW line and 330 ft. from SW line of 142-ac. tract in B. & B. Sur. No. 25 (N part of county) ..... T.D. 3,662 ft.; comp. 232 bbls. per day; ½-in. choke.

H. H. Weinert's No. 2 Grady Smith, 660 ft. NE of No. 1, B.&B. Sur. ..... Location.

Jim Kendricks & J. M. OByrne et al's No. 1 Runge State Bank, 330 ft. from NW line and 330 ft. from SW line of 142-acre tract ..... Derrick.

Magnolia Pet. Co.'s No. 2 Porter, 660 ft. NW of Weinert's No. 1 Grady Smith ..... Location.

Slick-Urschell's No. 4 Poetter, 330 ft. from SE line and 3,170 SW line of Marshall Sur. ..... Rigging up.

Sun Oil Co.'s No. 1 Scarborough, 660 ft. SW of Weinert's No. 1 Smith ..... Location.

GUADALUPE COUNTY

M. W. Eiser's No. 3 Wells, 1,700 ft. from S line, 300 ft. from W line of Blk. 3, Subd. 1, J. de la Baume Sur. ..... Location.

Adolph Seideman's No. 1 Seideman, 380 ft. from NE line, 470 ft. from NW line of Mrs. Adolph Seideman 147.5-ac. tract (Subd. 110) in Antonio Maria Esnaurrizar Sur. No. 11 ..... T.D. 2,955 ft.; S.D.

HAYS COUNTY

J. C. Crowder's No. 1 Burnett, 3,370 ft. from E line, 1,400 ft. from N line of tract in J. Ingram Sur. .... T.D. 430 ft.; set csg. S.D.

HIDALGO COUNTY

D. D. Oil Co.'s No. 1 Mrs. L. George, 330 ft. from N and W lines of 40-ac. tract in Share 13, Porcion 41. Location.

Davis & Harrison's No. 1 Lula George, 300 ft. from S and 700 ft. from E lines of Tract 13, Porcion 41, Ancient Jurisdiction of Reynosa ..... Drlg. 2,500 ft.

Otto Woods' No. 1 John Lawrence, 530 ft. from W, 300 ft. from N line of Tract 274, Porcion 39, Ancient Jurisdiction of Reynosa ..... T.D. 1,320 ft.; S.D. for wtr.

Union Sulphur Co.'s No. 1 American Rio Grande L. & I. Co., 460 ft. S and W of NE cor. of Lot 229, Blk. 59 (⅛ mi. N of Mercedes) ..... Drlg. 5,565 ft.; hard sandy shale.

JIM HOGG COUNTY

Sun Oil Co.'s No. 1-E Guerra & Son, 9,500 ft. N of county line along the E line of W 2,000-ac. tract and 660 ft. at R/A ..... Drlg. 1,005 ft.

JIM WELLS COUNTY

Plymouth Oil Co.'s No. 1 Cuero Cattle Co., 330 ft. from S and W lines of H.T.&B. Sur. No. 7, 2¼ miles W from Alfred ..... Rigging up.

Putnam and Bode's No. 1 McCarley, 600 ft. from SE line and 1,500 ft. from NE line of 300-ac. tract, Blk. A, of W. H. Bode Subdivision of Wallace D. Wade Ranch ..... Drlg. 3,902 ft.; D.S. test 3,671-78 ft. in 9 min. showed S.W.

KARNES COUNTY

W. R. Campbell et al's No. 1 Fernandez, 1,100 ft. SW of Tel No. 1, begin at NE cor. of city, S 1,200 ft., E 150 ft., Martinez Sur. ..... T.D. 2,604 ft.; abd.

R. E. Cexeaux et al's No. 1 Tom Campbell, 330 ft. S and E cor. of farm and survey, J. R. Backer Sur., 12½ miles SW of Falls City ..... Moving in rig.

Otto Krouse et al's No. 1 Marge Ruckman, 120 ft. from W line, 500 ft. from N line of 642-acre tract in Musquez Sur., 7½ miles N and E of Kennedy ..... Drlg. shale 1,964 ft.

F. Lovering et al's No. 1 P. Goff, 2¾ miles NE of Kennedy in C. Martinez Sur. ..... Location.

Magnolia Pet. Co.'s No. 1 Scarborough, 330 ft. S and E from NW cor. of tract, Eliz. Tally Sur. ..... Drilling deeper.

George Ray's No. 1 Radford, 666 ft. from SW and 3,432 ft. from SE lines of 753-ac. tract in Nichols Sur. (4 miles NE of North Pettus Field) ..... T.D. 3,910 ft.; abd.

G. A. Ray's No. 2 Radford, 4 miles N of Pettus Field. .. Rigging up.

C. J. Webster's No. 1 J. B. Cannon, 1,140 ft. from N line, 250 ft. from E line of 80-ac. tract in Lambrano Sur. ..... T.D. 1,790 ft.; standing; may deepen to Yegua.

Martin's No. 1 Houston, Thomas Leople Sur. No. 761 .... Top black shale 1,038 ft.; T D 1,985 ft.; to deepen.

A. P. Pierce's No. 1 Werner, in SW cor. of 40-ac. tract, 150 ft. from S and W lines of J. F. Torrey Sur. .... T.D. 993 ft.; standing.

KERR COUNTY

Edminston & Walker's No. 1 Whitworth, 1,160 ft. from S line and 1,332 ft. from E line of Sec. 1,439 of the H.E.&W.T. Sur. ..... T.D. 110 ft.; fishing.

Jeff Love and Eastland Oil Co.'s No. 5-E Jeff Love, 1,500 ft. SE of No. 1 and 1,580 ft. from SE cor. and 300 ft. from N line of Sec. 1,591 ..... T.D. 500 ft.; W.O.C.

G. F. Schreiner's No. 3 Love, 1,420 ft. from W line, 1,260 ft. from S line of Sur. No. 1,594 ..... Location.

Van Duyn & Moore's No. 1 Nowlin, 2,000 ft. from E line, 2,200 ft. from N line of Jas. R. Bettner Sur. No. 99 ..... T.D. 1,940 ft.; standing

KLEBERG COUNTY

J. S. Brown's No. 1 Antone Dietz, Sec. 7, Hotch estate .. T.D. 2,845 ft.; S.D.

Harry Clark's No. 1 V. J. Kivlin, 360 ft. from E line, 400 ft. from S line of Sec. 39, Blk. 3, Kleberg Town & Improvement Co. Sur. ..... T.D. 2,350 ft.; D.S. test 2,315-19 ft.; four joints mud, oil and sand; S.D.

LASALLE COUNTY

G. O. Ball's No. 1 J. M. Martin, 330 ft. from S and W lines of Martin 485.6-ac. tract, Sur. 683 ..... Moving in.

LEE COUNTY

Jas. B. Pederson's No. 1 Turner, David Hudson Sur. ... T.D. 1,900 ft.; reaming.

H. A. Sherlack's No. 1 Otto, 736 ft. from NW line, 1,310 ft. from NE line of 57.5-ac. tract in Thomas Morrow Sur. ..... T.D. 1,495 ft.; S.D.

LIVE OAK COUNTY

Holmes & Goodwin's No. 1 fee, 1,000 ft. from N line and 330 ft. from W line of 326-ac. tract in Brigada Haughty Sur. ..... T.D. 902 ft.; blew out wtr. and gas.

Houston Oil Co.'s No. 25 Cartwright, J. Sandman Sur. ... Prepare to spud.

Parsons & Smith's No. 1 Gomillion, 1,660 ft. W line, 160 ft. N line of tract No. 21, on N line and S line of survey, E. Jordan and I. D. Ammons Sur. .. T.D. 607 ft.; shale.

Witherspoon Oil Co.'s No. 2 H. Clements, 100 ft. S of No. 1 junked hole, Eliz. Jordan Sur. ..... Cemented 7-in. csg. at 515 ft.; W.O.C.

Witherspoon Oil Co.'s No. 1 Draper, 330 ft. E line, 660 ft. S line of A. J. Sparks Sur. No. 251 ..... Coring 828 ft.

Ike Taylor's No. 2 Griffith, 1,200 ft. from E line and 1,151 ft. from S line of lease in Tract 5, D. Osborne Sur. ..... Rigging up.

MAVERICK COUNTY

Ollie Wright's No. 1 L. Little, 500 ft. from N line, 3,800 ft. from E line of Potter Sur. No. 65 (10 mi. N of Eagle Pass) ..... T.D. 602 ft.; S.D.

McMULLEN COUNTY

Bedwell's No. 1 Brown, Sur. No. 54 ..... T.D. 780 ft.; abd.

Al Buchanan's No. 1 Hagist, 990 ft. from E and 330 ft. from N lines of N half of NE Sec. 18 ..... T.D. 2,267 ft.; abl.

Buford & Golightly's No. 1 Masuer, 760 ft. N line and 340 ft. E line of Sec. 22, H.T.&B. Sur., 5 miles W of Wents ..... Coring sand 407 ft.

Gleason et al's No. 1 Miles, Chas. Stephens Sur. ..... Location

Hall & Howard's No. 2 Lark, Scrugham Sur. ..... Drlg. shale 705 ft.

Jane Oil Co.'s No. 2 Lark, 1,320 ft. N line of Survey and 150 ft. E of No. 1 in Seeligham Sur.. ..... T.D. 1,066 ft.; W.O.C.

Lefevre & Spice's No. 2 Hagist, 2,034 ft. due W of the Lefevre & Spice No. 1 Hagist, Sec. 17 .. .. Drlg. 1,253 ft.

Loma Oil Co.'s No. 26 Jacob, 182 ft. W line and 805 ft. S line of G.H.&A. Sur. No. 5 ..... T.D. 1,070 ft.; prep. to comp.

Don Long's No. 1 Nueces Land & Livestock Co., Sec. 111 ..... Location.

W. C. McBride Co.'s No. 1 Hagist, 330 ft. out of the NE cor. of S half of SE Sec. 1 (¼ mi. E of Trinity Drillers' No. 1 Hagist dry hole) ..... Location.

H. D. Sheldon's No. 1 Jacob, 3,900 ft. NE line, 1,000 ft. NW line of W. B. Benham Sur. No. 9 ..... Moving in rig.

C. C. Shumway's No. 6 Shiner, 2,310 ft. from N line and 330 ft. from E line of NE¼ of Section 62 of the Shumway Subdivision of the Shiner Ranch..... Spud and S.D.

Texlo Oil Co.'s No. 3 Jacobs, 5,293 ft. NE line and 330 ft. SE line of Benham Sur. ..... T.D. 916 ft.; C.O.

MEDINA COUNTY

Scoggins & Sanders' No. 1 L. W. Burell, 150 ft. from E line, 1,750 ft. from N line of M. E. Gage Sur. 896. Drlg. lime 1,102 ft.

MILAM COUNTY

O. H. Birdwell's No. 1 J. R. Bartek, 150 ft. from N line, 180 ft. from W line of 88-ac. tract in J. A. de Pena Sur. ..... T.D. 1,559 ft.; show of oil est. ¼ bbl. per day.

MENARD COUNTY

Duffey-Chedster's No. 1 Mears Wilkinson, 660 ft. S line and 660 ft. W line of T.&N.O. Sur., Sec. 23, Abstract 756 ..... Rigging up.

NUECES COUNTY

Benedum & Trees' No. 1 Bickham, 3,650 ft. NE line 375 ft. SE line of 200-ac. tract in Farras Sur. ..... To deepen.

Diadem Oil Co.'s No. 1 J. C. Mayo, 1,000 ft. along line from SE cor. in NW direction, thence due N 300 ft. (near Robstown), Sec. 23 ..... Drlg. brittle shale and lime 4,703 ft.

Nuco Oil Co.'s No. 1 Synthia Bluntzer, Herrera Sur., 2,340 ft. from S line, 330 ft. from W line of 639.27-ac. tract ..... T.D. 5,831 ft.; abd.

Sullivan and Texon Royalty Co.'s No. 1 Simmons & Perry, 330 ft. from S and W lines of NE of square 640-ac. section out of SW cor. of Simmons & Perry tract, 3 miles east of Agua Dulce Field ..... Drlg. shale 6,000 ft.

Texas Seaboard's No. 1 Chapman, 1,320 ft. N and E lines of Sec. 40, 12m iles SW of Corpus Christi..... Rigging up.

United Prod. Co.'s No. 2 Tolbert, 1,250 ft. from S line and 120 ft. from W line of Blk. 9, Sec. 4, Puenticitas grant ..... T.D. 4,815 ft.; comp. 100 bbls. of gasoline daily through ¼-in. tubing.

REAL COUNTY

H. J. Heartwell et al's No. 2 L. J. Haby, 694 ft. from W line and 2,152 ft. from S line of A.B.&M. Sur. No. 175 ..... Drlg. 1,800 ft.

SAN PATRICIO COUNTY

Bunte et al's No. 1 C. C. Smith, start at NE cor. of F. Miller tract, go E 2,338 ft., thence S at right angles 819 ft., A. Armstrong Sur. (3 mi. SW of Odom) ..... Drlg. 4,475 ft.

Carpenter et al's No. 1 Sadler, 300 ft. each way out of SE cor. Blk. 1, Sec. 23, T. Peres Sur. ..... Drlg. 1,926 ft.

Heep Oil Co.'s No. 1 R. H. Welder, 300 ft. from N line, 467 ft. from W line of Welder 5.46-ac. tract.... Moving in material.

Jane Oil Co.'s No. 1 Ragsdale Bros., Sec. 58, Geo. H. Paul Subd. ..... Location.

Josey Oil Co.'s No. 1 Welder, 1,500 ft. NW or Atkins & O'Neil and Continental Oil Co.'s No. 1 discovery well ..... T.D. 5,378 ft.; D.S. test 5,358-78 ft. showed 6 fourbles oil and 2 fourbles S.W. in 15 min. W.O.C.

J. C. Means' No. 1 C. C. Smith, 990 ft. from N line, 330 ft. from W line of survey, J. W. Pays Sur., 1¼ miles NE of Angelita ..... Location.

Petrol Corp.'s No. 1 R. H. Welder, 467 ft. from S and E lines of 300-ac. tract ..... Moving in rig.

Plymouth Oil Co.'s No. 1-B Welder, 3,500 ft. NW of No. 1-A o..... Location.

Plymouth Oil Co.'s No. 2-A Wilder, 1,320 ft. due E of No. 1-A ..... Drlg. 150 ft.

STARR COUNTY

Chas. H. Andrews et al's No. 1 A. Guerra, San Jose grant, 330 ft. from N and 150 ft. from E line of Sec. 6 (NE part of county) ..... T.D. 310 ft.; S.D.

S. & B. Oil Co.'s No. 2 Kelsey Bass, 330 ft. from W and S lines of Blk. 12 of Subd. of Porcions 86 and 87, jurisdiction Camargo ..... Rigged up and S.D.

Jim Clouc, Inc.'s No. 1 J. Rodriquez, Share 35, Porcion 88, ancient jurisdiction of Camargo ..... Location.

Cooper & Andrews' No. 1 J. M. Martinez, SW cor. of Sec. 125 ..... Old well, to deepen; T.D. 3,200 ft.

Danvers & Harrison's No. 1 M. Guerra, 6,182 ft. NE line, 1,822 ft. NW line of Porcion 55 ..... Coring 1,675 ft.

Dean Bros.' No. 1 M. M. Garcia, 2,100 ft. from S line, 4,600 ft. from W line of Sur. No. 916 ..... T.D. 150 ft.; S.D.

Goodwin-Yantis' No. 5 Anna K. Bass, 150 ft. from S and E lines of Blk. No. 10, Sur. No. 3, Porcion 87 ..... Gas sand 685 ft.; comp. 10,000,000 ft. gas.

Great Plains Oil Co.'s No. 1 Sanches, 660 ft. from W line, 330 ft. from S line of SE NW of Sur. No. 344 .. T.D. 3,905 ft.; S.D.

McDonald & Campbell's No. 1 C. C. Bowman, 330 ft. from N and W lines of Blk. 13 ..... S.D. for wtr. 3,215 ft.

McDonald's No. 1 E. A. Pfley, 2,600 ft. from S and W lines of Sur. 933 ..... Coring 2,385 ft.

Merle Gundy's No. 1 Block, NW of Sur. 167 ..... Rigging up.

Mitchell's No. 1 Kelsey-Bass, 150 ft. from N, 1,150 ft. from E lines of Share 5, Porcion 75, ancient jurisdiction of Camargo ..... Location.

Myers, Sullivan & Jenkins' No. 1 Starr County Cattle Co., 330 ft. from N line, 330 ft. from W line, Blk. 62, Porcion 89, Share 60 ..... T.D. 2,635 ft.; abd.

Sun Oil Co.'s No. 6-C, V. C. deGuerra et al, 3,300 ft. from NW and 660 ft. from SW lines of Share 1, Saratoga grant, NW Starr County ..... Coring 1,914 ft.

Weekly Oil Corp.'s No. 1 M. M. Garcia, 330 ft. from S, 330 ft. from W lines of Blk. 40, tract 1, in N end of Porcion 99, ancient jurisdiction of Camargo.. Moving in.

E. L. Younkins' No. 2 Kelsey Bass, Porcion 86 ..... Abd. location.

UVALDE COUNTY

Evans & Johnson's No. 1 Farris, J Hammons Sur. .... T.D. 1,093 ft.; S.D.

Lon Evans' No. 1 Stone, 2,566 ft. from N line and 1,473 ft. from E line of survey, 8½ miles NE of Uvalde, Kent Sur. No. 652 ..... Spud.

Humble Oil & Ref. Co.'s No. 1 R. L. Anderson, 7,450 ft. SW of NE line and 9,100 ft. SE of NW line of J. J. Guerra Sur. (2 mi. NE of Uvalde) ..... Drlg. hard lime 1,650 ft.

T. T. Word's No. 2 Trulove, 40 ft. N. 42 deg. E. of No. 1. Fishing 390 ft.

WEBB COUNTY

J. W. Edwards' No. 1 M. Vela, 766 ft. from E and 450 ft. from N line of Blk. 9, Sur. 267 ..... T.D. 2,613 ft.; abd.

Fidelity Exploration Co.'s No. 1 Soldivar, 1,300 ft. from E line, 2,600 ft. from N line of Sur. 657 ..... Set surface csg. at 200 ft.

Gohlson's No. 1 Yeager, 330 ft. W line and 300 ft. S line of NW¼ of Sur. 346, NE part of county .... Location.

J. D. Manley's No. 1 S. Benavides, 347 ft. NW line, 212 ft. NE line of Blk. 318, Hill Subd. of M. Arispe grant ..... Derrick.

Quintana Petroleum Co.'s No. 2 Duval Ranch, Block 11, Survey 3, Zapata County School Land Survey.... T.D. 2,178 ft.; abd.

Shankel et al's No. 1 Saldivar, Sur. 653 of J. V. Borrego grant ..... R.U.

United Production Co.'s No. 1 Bruin, Block 42, Survey 3, Mariano Arispe Grant, E of Bruni City ..... T.D. 3,417 ft.; showed 8 joints of 42 grav. oil and 6 joints of mud from 3,410-17 ft; W.O.C

Weekley Oil Corp.'s No. 1 R. Salvidor, 1,289 ft. from E line and 348 ft. from N line of Sec. 657, Borrego grant (SE part of county) ..... T.D. 657 ft.; S.D.

WILSON COUNTY

A. P. George's No. 1 fee, 166 ft. from SE line and 300 ft. from SW line of 56.32-ac. tract in Canuto Diaz Sur. ..... T.D. 976 ft.; S.D

Pfiel & Vogel's No. 1 Gutzeit, Flores grant, 150 ft. N of road and 150 ft. from W line of farm, 7 mi. NW of Floresville ..... S.D. 809 ft.

WILLIAMSON COUNTY

McLean et al's No. 2 R. C. Miller, 300 ft. to S line, 100 ft. to W line of tract, R. Manlove Sur. ..... T.D. 2,300 ft.; cleaning out.

Taylor Ref. Co. et al's No. 3-A John Reiger, H.&W. Sur.. Drlg. Serpentine 936 ft.

ZAPATA COUNTY

R. B. Morrison's No. 1 Y. and R. Ramirez, 330 ft. from NE line and 330 ft. from SE line of Blk. 4, Share 20, Porcion 19 (5 mi. from Starr County line) ..... Drlg. sand and shale 1,375 ft.

H. V. & W. Oil Co.'s No. 1 Cuellar ..... Set 8-in. csg. at 1,100 ft.
Muckelroy's No. 1 Flores, on NE line and 75 ft. from SE line of Lot 2, Blk. 30, Muckelroy Subd. of Porcion No. 27 ..... Derrick.
Robert Newton's No. 1 O. W. Killam, 150 ft. NW line, 150 ft. SW line, Sec. 188, Blk. 6 ..... Location.
Joe Palmer's No. 11 S. Vela, 330 ft. from NE and SE lines of Blk. 170, Share 4 of L. Grillo grant, (3 mi. E of Redondo Pool) ..... Moving in.
The Texas Co.'s No. 46 Jennings, 750 ft. N and 12 deg., 30 min. E of No. 44 in Cerrito Blanca grant ..... T.D. 1,226 ft.; comp. 60 bbls. dly.
Texas Co.'s No. 49 Jennings, N 12 deg. 30 min., E 750 ft. from No. 45 ..... Coring sand 1,178 ft.; show of oil and gas in sand 1,174-78 ft.

Southwest Texas Proven Areas

Week Ending June 2

NORTH DALE POOL—BASTROP COUNTY

Watt L. Saunders' No. 1 Harris, 1,100 ft. from SW line, 2,830 ft. from NW line of John Maximilian Sur. No. 22 ..... Top Austin 2,149 ft.; T.D. 2 338 ft.; bailing.

NORTH PETTUS FIELD—BEE COUNTY

United Prod. Co.'s No. 45 Ray, 2,332 ft. SW of No. 13 and parallel with N line of tract, thence SE at right angles from N line of tract, W. J. Porter Sur. ..... Coring 3,945 ft.

ECKERT POOL—BEXAR COUNTY

Alamo Nat. Gas Co.'s No. 2 Coreth, 300 ft. SE of Humble's No. 2 Coreth in A. Stafford Sur. ..... T.D. 1,055 ft.; set 6⅝-in. csg.; S.I
J. F. Harrison's No. 4 F. Gembler, 150 ft. from NW line, 460 ft. from NE line of 88-ac. tract in J. Montes Sur. ..... T.D. 881 ft.; S.D.
S. J. Moore's No. 5 T. W. Masterson, 150 ft. from S line, 175 ft. from W line of 41-ac. tract in Miguel Gortaris Sur. ..... T.D. 736 ft.; 6⅝-in. csg.; S.D
S. J. Moore's No. 4 T. W. Masterson, 150 ft. from S and W lines of tract in M. Cartari Sur. ..... T.D. shale 695 ft.; S.D.

VON ORMY POOL—BEXAR COUNTY

Von Ormy Oil Co.'s No. 2 E. B. Carruth, 515 ft. from W line, 1,970 ft. from S line of 160-ac. tract out of 657-ac. tract in F. Rolen Sur. ..... T.D. 720 ft.; S.D.

EAGLE HILL POOL—DUVAL COUNTY

Shasta Oil Co.'s No. 3 J. R. Foster, 990 ft. from N line and 165 ft. from W line of 70-ac. tract in Sec. 206... Moving in rig.
S.R.C. Corp.'s No. 3-B J. R. Foster, 220 ft. from N line and 550 ft. from E line of 100-acre lease in Sur. 206.. T.D. 1,486 ft.; comp. 25,000,000 ft. of gas and spray of oil.

GOVERNMENT WELLS POOL—DUVAL COUNTY

Bridewell Oil Co.'s No. 4 Hahl, Block 29, Survey 350.... Location.
Central Producers' No. 2 Luptak, 330 ft. N line, 150 ft. E line, E½ SE of Sur. No. 41 ..... Drlg. 300 ft.
Cox & Hamon's No. 14 State, Sur. No. 60 ..... T.D. 2,237 ft.; comp. 100 bbls. dly.
Humble Oil & Ref. Co.'s No. 24 Paul White, 4,456 ft. from E line and 330 ft. from N line Sec. 249..... Moving in.
Humble O. & R. Co.'s No. 25 Paul White, 990 ft. S line, 330 ft. E line of Sec. 249 ..... Location.
Luse & Cloyes' No. 1 Hagist, 330 ft. from N and W lines of Lot 13, Section 265 ..... Drlg. shale 2,461 ft.
McKay & Reed Bros.' No. 7 State, Survey 60..... Location.
Magnolia Pet. Co.'s No. 2 Duval County Ranch, 990 ft. from S line and 330 ft. from E line Sur. No. 59..... T.D. 2,252 ft.; comp. 20 bbls. hrly.
Magnolia Pet. Co.'s No. 27 Duval Ranch, 1,650 ft. from S line and 990 ft. from W line of Sec. 208..... T.D. 2,225 ft.; comp. 6 bbls. hrly.
Magnolia Pet. Co.'s No. 28 Duval County Ranch, Survey No. 208 ..... Location.
Magnolia Pet. Co.'s No. 4 Hahl-Riley, Survey No. 45.... Rigging up.
Magnolia Pet. Co.'s No. 6 J. W. Riley, 330 ft. from N line and 990 ft. from E line of SW¼ of Sec. 45.. T.D. 2,256 ft.; comp. 6 bbls. hr.; ½-in. choke.
Magnolia Pet. Co.'s No. 7 J. W. Riley, 286 ft. from S line, 185 ft. from W line and E offset to Lefler's No. 1, in Sur. No. 45 ..... T.D. 2,269 ft.; comp. 25 bbls. hrly.
Reed & McKay's No. 7 State, 330 ft. from S line and 330 ft. from W line of S½ of NW ¼ of Sur. 60.... T.D. 2,231 ft.; comp. 75 bbls hrly.
Reynosa Oil Co.'s No. 5-D Duval County Ranch, 990 ft. from S line, 330 ft. from E line of S½ SW Sec. 362.. Location.
Russ and others' No. 1 Cantrell, NE¼ of NE¼ of Sur. No. 61 ..... T.D. 2,297 ft.; swabbing.
Smith Storey's No. 7 Lundell, 150 ft. from N line and 150 ft. from W line of NE¼ of SW¼ of Sur. 43..... Drlg. 2,000 ft.
J. D. Clair Smith's No. 1 W. P. Norton, Survey 62 ..... Drlg. shale 250 ft.
Southwest Drlg. Co.'s No. 13 Hahl, 990 ft. from S line, 330 ft. from W line of SE Sec. 43 ..... Spud.
Sun Oil Co.'s No. 33 Welderkehr, 330 ft. from S line. 990 ft. from E line of Sur. No. 359 ..... Location.
Sun Oil Co.'s No. 49 Welderkehr, 660 ft. S of No. 48 and 660 ft. W of No. 46, Sur. 359 ..... Location.
Sun Oil Co.'s No. 62 Welderkehr, 330 ft. from S line, 990 ft. from W line of Sec. 361 ..... Rigging up.
Sun Oil Co.'s No. 63 Welderkehr, 990 ft. from S line, 2,310 ft. from E line of Sec. 359 ..... Location.
The Texas Co.'s No. 10 Duval County Ranch Fee, 990 ft. N and 330 ft. W of SE cor. of lease in Sec. 362, G. Garza Sur. ..... Drlg. lime and shale 1,840 ft.

KINGSVILLE POOL—KLEBERG COUNTY

Ryals & Bartlett's No. 1 Flato, 150 ft. from N line, 30 ft. from W line of NE SE Sec. 46, of Kleberg Town & Improvement Co. Sur. ..... T.D. 985 ft.; S.D.

LUCAS POOL—LIVE OAK COUNTY

Houston Oil Co.'s No. 5 Cartwright, 1,150 ft. SW line and 1,775 ft. SW line of J. M. Colchado Sur. ..... T.D. 5,398 ft; P.B. 2,114 ft; comp. 30,000,000 ft. gas.

JACOB POOL—McMULLEN COUNTY

Jane Oil Co.'s No. 1 Lark, 150 ft. from S and 100 ft from W line of Blk. 13 ..... T.D. 1,048 ft.; testing.
C. R. Kennon's No. 1 Lark, 810 ft. from W line, 150 ft. from N line of 20-ac. tract, Blk. 27, Scrugham Sur. ..... T.D. 952 ft.; S.D.
Loma Oil Co.'s No. 33 Jacob, 660 ft. S of No. 11, 330 ft. from E line of lease, Sur. No. 7 ..... T.D. 1,002 ft.; S.D.

CUEVITAS POOL—STARR COUNTY

Sun Oil Co.'s No. 6-B, M. Guerra & Son, 2,310 ft. S of Starr and Jim Hogg County lines and 2,970 ft. W of E line of Los Cuevitas Sur. ..... T.D. 2,055 ft.; D.S. test 2,047-55 ft.; 280 ft. oil in 20 min.; no gas pressure; 1,800 ft. oil in hole Testing.
Sun Oil Co.'s No. 5-C M. Guerra & Son, 1,320 ft. NE of No. 4-C La Sacatosa grant ..... Location.

AGUA DULCE—NUECES COUNTY

Camp et al's No. 3 King, 990 ft. S of N line, 330 ft. W of E line of Sec. 24, R. Garza Sur. ..... T.D. 6,021 ft.; Schlumberger shwd three sands.
Garland Clymore's No. 2-A Ollie Purl, 660 ft. from E line and 660 ft. from S line of Blk. 4, Section 6, Ross Peters Subd. ..... T.D. 4,804 ft.; W.O.C.

SAXET FIELD—NUECES COUNTY

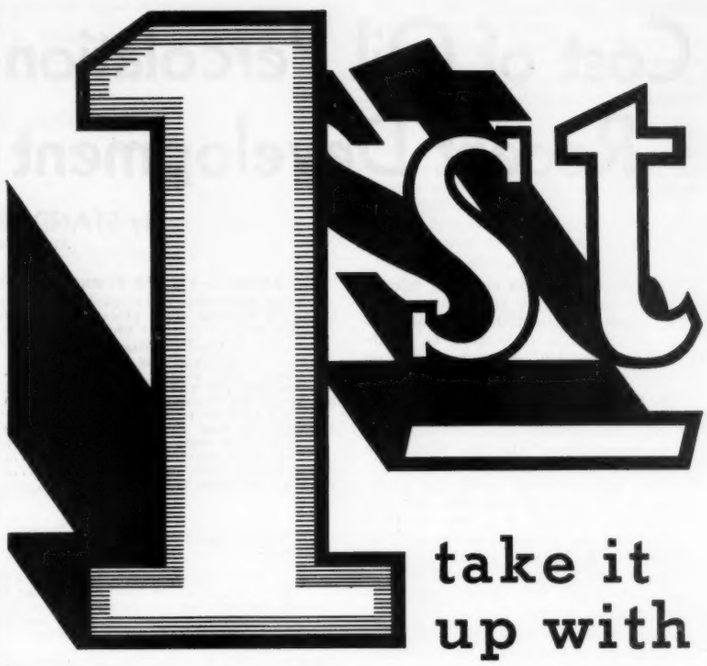
South Mineral Oil Co.'s No. 1 J. W. Page, E. Villareal Sur., 471 ft. from E line, 160 ft. from S line of 159-ac. tract ..... T.D. 4,871 ft.; reaming.

LOS OLMOS POOL—STARR COUNTY

Los Olmos O. & G. Co.'s No. 57 Kelsey Bass, 150 ft. from N line, 568 ft. from W line of SE SW Sec. 6, Porcions 75, 76 and 77 ..... T.D. 640 ft.; standing; depth corrected.

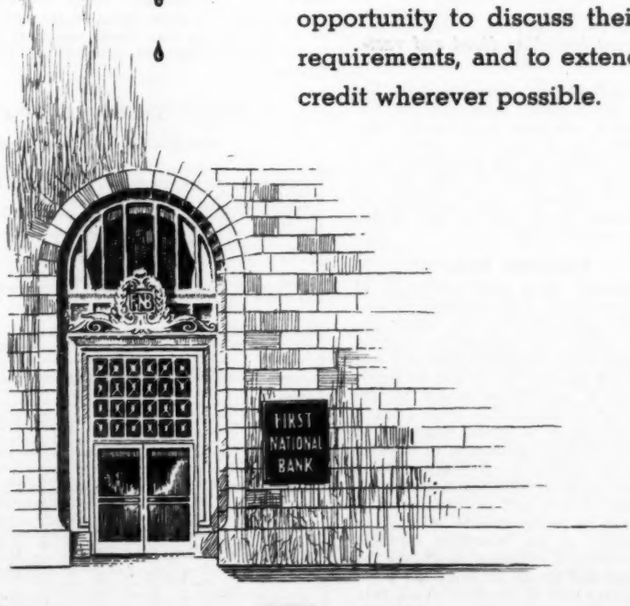
JENNINGS POOL—ZAPATA COUNTY

O. W. Killam's No. 32 Cuellar, 1,410 ft. from NW line, 4,628 ft. from NE line of 17-ac. tract ..... T.D. 3,523 ft.; abd.



THE FIRST NATIONAL BANK and TRUST COMPANY
TULSA

As Tulsa's pioneer bank in oil financing, it is but natural that oil men of the Mid-Continent area turn *first* to this institution when they are in need of temporary funds. We are always glad to have the opportunity to discuss their requirements, and to extend credit wherever possible.



THE OIL BANK OF TULSA

Cost of Oil Percolation Filtration in the Light of Recent Development in Refinery Processing

By STANDARD R. FUNSTEN
Attapulgus Clay Co.*

The selection of the optimum adsorption process—whether it be all percolation, combined percolation and contacting, or all contacting—must be established on accurate cost data based on operating conditions which embody the most recent refinements known to be commercially applicable. It is unwise to accept existing-plant manufacturing costs as representative of the true value of a process without preliminary study to determine whether such costs are representative of optimum operating practice. Comparisons should, of course, consider current material values, together with requirements as regards capital expenditure for new equipment. Such requirements, obviously, will depend upon the existing plant set-up.

While excellent work has been done in advancing special phases in various refineries, the industry has been backward in applying refinements to the percolation process which are known to be essential for optimum operation. The best tool available to a management for obtaining efficient operation is an adequate cost system. Unfortunately, but few of the domestic refineries are provided with adequate percolation costs. The following analysis is given as a means of evaluating the degree to which the various refinements in this field influence the ultimate cost of product. It is impossible in so short a time to discuss the subject fully.

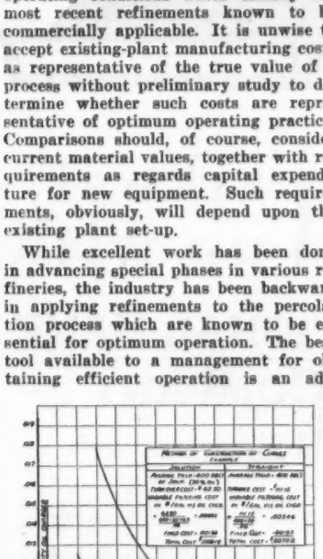


Figure 1—Total percolation filtration cost including fixed and variable

Percolation Costs

In arriving at a basis for study of percolation costs, it is desirable to consider the operation from the standpoint of work done and expense incurred in doing that work. Obviously, the unit cost for a given amount of oil will be determined to a very large extent by the amount of production or yield from a filter containing a given quantity of bleaching medium. Reduction of work to be done, or increase in efficiency of doing that work, will be reflected in larger filter yields. Yields will be increased proportionate to improvements effected in the quality of the bleaching medium. Having obtained optimum conditions for work done and means for doing the work, the ultimate cost of the filtered oil then becomes a function of the cost of operation the filter, hereafter referred to as "filter-turnover cost."

The operating cost may readily be divided into direct-expense items which are proportional to oil throughput, and direct-expense items which are proportional to clay consumption. It is necessary to prepare organization and expense schedules based on individual situations. When the fixed and variable items have been established, they may then be used in arriving at unit percolation costs for a given filter yield.

Table 1 is an example in applying the variable items for the purpose of establishing filter-turnover costs. The total cost of turning over a solution and straight filter, in this case, is shown to be $62.50 and $111.15, respectively. It should be noted that these costs are exclusive of overhead and depreciation, and do not include the viscosity-oil loss to clay or oil degradation. The calculation has been made on an empirical basis, and does not represent what is considered to be optimum for percolation. The labor and general-expense items in filter-turnover costs, as shown, represent about 50 per cent of the total labor and general-expense items entering percolation operating costs. Experience would indicate that proration of these items on the basis of 75 per cent to clay would represent a better average for the majority of refiners.

TABLE 1—FILTER-TURNOVER COSTS (PER 1,000 CUBIC-FOOT FILTER)

Note: Applicable to the percolation decolorization of an acid-treated, neutralized Mid-Continent cylinder stock processed as follows: (1) solution percolated; (2) dewaxed and reduced; and (3) straight filter finished.

Type of filter Average clay No.	Solution 5-12	Straight 1-4
A. *Labor and general expense items—$0.5446 per 1,000 lbs.	$17.97	$17.97
B. Steam for washing (25,000 lbs. at $0.30 per 1,000 lbs.)	7.50	7.50
C. Naphtha loss filter washing—1.8 per cent at 5 cents per gallon	4.50 (100 bbls. used)	13.50 (300 bbls. used)
D. *Fuel—clay burning	2.48	2.48
E. *Reducing filter wash	0.59	26.06
F. Clay cost (see Table 2)	29.46 (5-12 clay at $0.864 per 1,000 lbs.)	48.64 (1-4 clay at $1.417 per 1,000 lbs.)
Total filter-turnover cost	$62.50	$111.15

Notes:
* A. This item computed from costs allocated on a basis of clay throughput.
D. 50 lbs. fuel per 1,000 lbs. clay at $1.50 per 1,000 lbs. fuel
E. As follows: (1) Solution filters, reducing only 5 per cent of wash (158.2 bbls. per filter), balance to fresh solution make-up. (2) Reducing all straight filter wash (354.6 bbls. per filter).

While it was considered in this calculation that the bleaching earth was used 12 times before discarding, it has been found in actual practice that optimum point of discarding earth, in general, ranges between 5 and 15 burns, depending upon the type of work to be done. Details of the method used in establishing clay values are shown in Table 2. It will be noted that the total cost of new earth, together with cost of earth required for making up losses, is charged to the process, and prorated on an efficiency basis.

Figure 1 expresses the sum of variable and fixed costs in terms of oil throughput. An example of application is the determination of total unit costs for a given filter yield as shown below:

Example:
Required to calculate the filtration cost for Mid-Continent cylinder-oil manufacture when the average solution yield is 600 bbls. per filter, and the average straight percolation yield is 300 bbls. (50 gals.) per filter.

Solution percolation:
Charge to solution filters = 100 gals. viscous oil. Yield filtered oil (0.98 × 100) = 98 gals. viscous oil. Cost for 600-bbl. solution filter yield (Figure 1)—$0.0082 per gallon viscous oil charge = $0.82

Dewaxed viscous oil:
(0.85 × 0.98)—83.3 gals.

Straight percolation:
Charge to straight filters—83.3 gals. Yield bright stock (0.98 × 83.3)—81.6 gals. Cost for 300-bbl. straight percolation yield (Figure 1)—$0.0089 per gallon viscous oil charge = $0.73

Total cost for percolating 81.6 gals. = $1.55

Total percolation cost—dollar per gallon oil produced = $0.019

Table 3 demonstrates the relative importance of each of the factors affecting filter costs in terms of the total filter cost.

It is interesting to note here that in no instance does the clay expense exceed 40.5 per cent of the total filtering costs. Had overhead and depreciation items been included, the ratio of clay to total would be still lower. This fact, when considered on the basis of new and old clay-filter yields, is significant in the determination of the point at which a clay should be discarded. A large yield from relatively new clay may readily result in lower ultimate costs than smaller yields from older clays, even though clay expense in the latter case be substantially less.

From the foregoing analysis it may be concluded that the factors of importance in filter costs are determined by those items influencing filter yield, oil recovery and process expense. These factors may be discussed under the following headings:

1. Type of stock and finished oil.
2. Bleaching earth.
3. Application of earth.
4. Burning and revivification of earth.
5. Other considerations.

Percolation Costs

1. Type of Stock and Finished Oil.

(a) Stocks: In the early days of oil refining the determining factor as to the quality of stock charged to the percolation plant—whether it be a neutral, cylinder, wax, petrolatum, kerosene or naphtha—was largely that of crude origin. With improved methods of fractional distillation, acid treatment and introduction of other processes such as hydrogenation, solvent treating, vapor and liquid-phase cracking, the picture has become much more complicated.

The application of the foregoing phases of refining in the industry has resulted in lower colored or higher quality stocks being delivered to the adsorbent process. In each instance, however, there seems to have developed certain factors which have tended to limit their application.

Among the disadvantages of fractional distillation for overhead cylinder stock are poor quality bloom and loss of viscosity yield. Disadvantages of acid treatment are loss of yield and high cost. With vapor and liquid-phase naphtha treatment the tendency is now to completely eliminate preliminary acid treatment, thus reaping the advantage of increased yield obtained by percolation or contacting with adsorbent at relatively high temperatures and pressures.

The solvent-treating processes are still on the threshold of development. Among

DAILY OPERATION OF FILTER HOUSE NO._____

FOR 24-HOUR PERIOD BEGINNING 7 A. M._____19____

Filter Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Hours Since Charging																	
Hours on Last Operation																	
Remarks	Time																Remarks
	7 A. M.																
	8 " "																
	9 " "																
	10 " "																

Hours	Standard Time Sol.	Str.	SUMMARIZED DATA 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Totals Sol.	Totals Str.	Average Sol.	Average Str.
Fill Clay																						
Fill Oil																						
Run to Color																						
Run Drain																						
Blow Air																						
Wash																						
Final Steam																						
Dump																						
Repairs																						
Idle—Sol'n																						
" Straight																						
Total																						
% Oil Manhead—1																						
" " 2																						
" Composite																						
Charge Stock																						
" Color																						
Yield Bbls.																						
" Color																						
Clay No.																						

Figure 2—Form for reporting conditions hourly in the filter house

*Before American Petroleum Institute at Pittsburgh, Pa.

the solvent processes which have obtained substantial recognition in recent technical publications are chlorex, duosol, Edeleanu, furfural, nitrobenzene and phenol. In addition, propane has been used to de-asphaltize. The use of bleaching earth on solvent-treated oils has been found to improve quality, even though in a few instances it was not necessary from a transparent-color standpoint. It seems probable that solvent-treated oils will require substantial quantities of adsorbent. This, in part, may be attributed to the necessity for filtering to extra light colors in order to avoid the poor cast generally characteristic of solvent-treated oils and to the difficulty frequently encountered in removing color bodies such as are present in solvent-treated oil.

The previous history of the stock, whether it be one or all of the foregoing treatments, should always be known and considered in the determination of optimum adsorption method. The manufacturing cost preliminary to adsorption treatment is reflected very substantially in subsequent charges for oil loss and degradation.

Color of Stock

While color of a stock is an important criterion of work to be done, there are other considerations. Stocks delivered to the percolation filter should be substantially free from moisture. The presence of water in the oil in amounts exceeding 0.1 per cent is apt to be reflected in lower yields. The presence of pepper sludge in the oil preliminary to percolation is equally as disadvantageous in the percolation process as in the contacting process.

In actual practice substantial economies may often be obtained by delivering fractional cuts (obtained from the filter stream after it has reached color) to a new filter previous to charging the original darker-colored stock. However, this should never be adopted as plant practice until the advantages have actually been proved by preliminary laboratory tests.

(b) Finished oil: While the trend in stocks delivered to absorption processes has been towards lighter colors, it is also true that the trend in specification of finished oil has been towards lighter colors. Thus, the amount of work to be done by a given amount of adsorbent has not decreased as much as one might expect.

In some cases the yield of oil from a filter is actually determined not by color, but by emulsion test, by sludge test, etc. In such cases there is often sufficient relation to permit correlation and control of the operation by color.

(c) Color: In as much as color is an outstanding measure of work done in the percolation process, it has become an important means of control. It is obviously desirable in exercising this control to employ a method which is additive in units, in order to indicate the amount of work done quantitatively. The N.P.A. color system is of little value for this purpose, since its units of value are not truly representative of color densities; e.g., 1 bbl. of 8 N.P.A. oil plus 1 bbl. of 2 N.P.A. oil would mix to 6-7 N.P.A. rather than 5 N.P.A. The Lovibond or Tag-Robinson colors are more nearly additive. One of the most accurate methods known for measuring the true color densities of oil is described in a recent article entitled, "Optical-Density Color Measurement for Petroleum Oils."[1] This method has proved very satisfactory in laboratory studies.

Supplementary processing may affect the economies of the percolation process. It is desirable, in any case, to establish a color balance starting with the original stock from crude distillation and ending with finished oil. Analysis of this type shows that frequently it is more desirable, from an overall-cost standpoint, to assume a greater color load in percolation in order to reduce excessive acid and solvent cost. Color control is found especially valuable for studying the production or accumulation of excessive color in the various distillation processes associated with percolation.

Unfortunately, from the control point of view, the amount of color removed in adsorption treatment is not directly proportional to filter yields. While the bulk of color in a given stock, in terms of color units, is readily removed, it becomes increasingly difficult to remove the last increments present. In comparing the percolation process within itself, or with another process, this fact must always be considered; and comparisons must be made on the basis of work done over the same color-removal range.

2. Bleaching Earth.

The selection of an earth for percolation filtration may vary to some extent with the type of work to be done. Among the significant factors are:

(a) Activity: This not only involves the initial activity of the earth, but its capacity to maintain a relatively high degree of activity upon revivification. While various abbreviated tests have been advanced for evaluating the activity of earths, none has proved as satisfactory as the application of standardized laboratory percolation.

(b) Filter-aid properties: Earths for percolation must have characteristic hardness to permit steaming and revivification with a minimum of mechanical distintegration.

(c) Neutralization value: It is considered a valuable attribute of a bleaching earth to possess the capacity to neutralize or adsorb acid bodies in process of filtration.

(d) Meshing: The application of a correct meshing to perform a given job is very important. While by far the greater bulk of percolation is carried out on 30/60 mesh earths, grades are available ranging from 15/30 up to 60/90. Effect of size of particle in decolorization efficiencies seems to have been overestimated in recent technical references. This confusion seems to have originated from lack of consideration of time of contact sufficient to obtain equilibrium of oil and adsorbent. It is well established that the actual difference in area of "outer surfaces" of a particle of adsorbent is negligible, as compared to the "inner surface" available for decolorization.

(e) Oil retention: While in the case of contact clays oil retention is an important consideration, the efficient recovery of oil retained in percolation clays makes this property of relatively little significance.

3. Application and Washing of Earth.

There is frequently too great importance attached to the various characteristics of filtering containers used for percolating earths. Much of the time spent in this connection would be to greater advantage if applied to clay washing and clay revivification. In general a filter should be of sufficient strength to withstand pressures of 50 pounds per square inch. It should have a filter-bed depth of at least 5 feet, and the diameter should not exceed the total filter-bed depth in linear measurement. Added to this, the base of the filter should be equipped with a cone and suitable filter head (such as the Fulton or Brown type) for allowing free passage of oil. Vertical cylindrical filters seem, in general, to give as satisfactory results as tapered filters—although for white oils and petrolatums it is essential to have ample construction at the base of the filter, in order to permit a sharper separation of oil as progressively decolorized.

Clay, in the case of lubricants, should be charged to the filter at a temperature approximating that optimum for filtration of the stock. The use of coils within the filter should be discouraged on account of tendency to overheat and channel. The most satisfactory arrangement for maintaining heat in the filter is a well-insulated outer shell or room. Oil fed to the filter should be heated to the approximate temperature of filtration. When it is intended to produce white colors, it is well to pack the earth during filling; otherwise it is probably not justified. An automatic spreader to distribute the feed evenly into the filter is advantageous. After the filter has been filled, the earth should be leveled off, manhead closed, and oil pressure applied to hasten the soaking period—except in extreme cases, as when filtering to white colors. In such cases, gravity feed should be used. When filtered oil appears, it is advantageous to stop the flow at the base of the filter for a sufficient period to permit the entire filter to become full and soak. The time required for soaking, in general, does not exceed one hour.

Table 4 indicates in a very general way temperatures and pressures considered satisfactory for filtering various stocks. In any case, the exact condition should always be determined in pilot apparatus in order to establish the optimum. This is particularly true as regards the contact time. When the filter has reached color, it is good practice, from a throughput standpoint, to increase the filtering rate while running "off color" for re-cycle. The matter of

(Continued on Page 55)

CLAY BURNING LOG SHEET

Period_____ 24 Hours Ending_____7 A. M._____19_____
House No._____ Kiln Type_____ Kiln No._____

Time	Clay No.	Clay Code	Bin Number From Bin No.	Bin Number From Filt No.	Bin Number To Bin No.	Bin Number To Filt No.	Rate Tons/Hr.	Hearth Temperature of #2 Rotary	#3	#4	#5	Burned Clay % Vm	Burned Clay Wt.(Lb. Per Cu. Ft.)	Signed
7 A. M.														
8.														
5.														
6.														

Miscellaneous Data
Total Tons Burned____24 Hours_____Tons/Hr._____Remarks
Total Time Repairs_____
Total Time Idle_____
Total, Fuel Consumed Gals._____Gals. Ton
Code R Repairs L Idle O Wet Clay

Figure 3—Form to be used in reporting conditions during burning of clay

TABLE 2—STANDARD COST OF CLAYS BY CLAY NUMBERS

Column clay No.	A Original weight	B Burning loss (1.5%)	C Net weight Pounds	D Net weight Per cent of total	E Efficiency (%)	F Product (E×C)	G Clay cost ($ per 1,000 lbs.) "M"	G Clay cost ($ per 1,000 lbs.) "N"	H Clay cost ($ per 1,000 lbs.) "M"	H Clay cost ($ per 1,000 lbs.) "N"
1	1,000	150	850	9.045	100	850	1.450	1.595	1.708	1.879
2	850	13	837	8.907	86	720	1.230	1.353	1.469	1.616
3	837	13	824	8.768	77	634	1.083	1.191	1.316	1.447
4	824	12	812	8.640	69	560	0.957	1.053	1.178	1.297
5	812	12	800	8.513	64	512	0.875	0.963	1.093	1.203
6	800	12	788	8.385	58	457	0.781	0.859	0.991	1.090
7	788	12	776	8.257	54	419	0.716	0.787	0.922	1.015
8	776	12	764	8.130	51	389	0.665	0.732	0.871	0.958
9	764	11	753	8.013	48	361	0.617	0.679	0.820	0.902
10	753	11	742	7.899	45	334	0.571	0.628	0.769	0.846
11	742	11	731	7.781	43	314	0.536	0.590	0.735	0.808
12	731	11	720	7.662	42	302	0.519	0.570	0.718	0.789
Total	9,677	230	9,397			5,853	10.00	11.00		

	Initial cost of clay $ per ton "M"	"N"
Clay cost	$12.50	$12.50
Freight	7.00	9.00
Handle and burn	.50	.50
Total	$20.00	$22.00
Clay cost, $ per 1,000 lbs.	$10.00	$11.00

Unit Clay Cost by Numbers (Col. "H") =

$$\frac{\text{Clay Wt. (C)} \times \text{decimal Efficiency (E)}}{\text{F (Total)}} \times \frac{\text{Initial Clay Cost (\$ per 1,000 lbs.)}}{\text{Clay Weight (C)}} \times 1{,}000$$

TABLE 3—EFFECT OF FILTER YIELD UPON DISTRIBUTION OF FIXED AND VARIABLE FILTRATION COSTS, FOR SOLUTION AND STRAIGHT PERCOLATION

Type of filter	Solution* (5-12 clays)		Straight (1-4 clays)	
Average yield—barrels (50-gal.) per ton	1,000	500	500	100
A. Total filtration cost, dollars per gallon of viscous oil charged	$0.0054	$0.0098	$0.0060	$0.0232
Proration of costs:	Per cent	Per cent	Per cent	Per cent
B. Variable costs (on clay)				
1. Clay cost	35.3	40.5	28.5	36.3
2. Labor, expense, general items	21.5	24.6	11.9	15.2
3. Steam for washing	9.0	10.2	5.0	6.4
4. Naphtha loss	5.4	6.2	8.8	11.2
5. Fuel for clay burning	2.9	3.3	1.7	2.2
6. Reducing filter wash	0.7	0.8	17.1	21.6
Total variable costs	74.8	85.6	73.0	92.9
C. Fixed costs (on throughput)	25.2	14.4	27.0	7.1
Total filtration costs	100.0	100.0	100.0	100.0

*70 per cent naphtha.

TABLE 4—APPROXIMATE TEMPERATURE, TIME AND PRESSURE CONDITIONS FOR 1,000 CUBIC FOOT PERCOLATION FILTERS

Type stock—	Saybolt viscosity (deg. F.)	Temperature of filtration (deg. F.)	Rate of filtration (barrels per hour per 1,000 cu. ft.)	Pressure filtration* (lbs. per sq. in.)
1. Light spindles	Up to 200/100	80-100	5-25	0-25
2. Heavy spindles	200 to 500/100	100-140	5-15	0-25
3. Overhead and residual cylinder stocks	100-160/210	160-200	2-10	15-50
4. Naphtha solutions of "S"	.....	100-130	30-50	5-15
5. Petrolatums	100-160 M.P.†	25 above M.P.†	5-20	0-15
6. Waxes	100-160 M.P.†	25 above M.P.†	5-20	0-15

*Pressures in the higher range are required where 60/90 mesh earths are used.
†Melting point.

[1] H. W. Ferris and J. M. McIlvain, Ind. Eng. Chem., 6, 23 (1934).

Bureau of Mines Statistics for the Month of March, 1934

PRODUCTION OF CRUDE PETROLEUM BY STATES AND PRINCIPAL FIELDS

(Thousands of barrels of 42 gallons)

	March, 1934 Total	March, 1934 Dy.av.	Feb., 1934 Total	Feb., 1934 Dy.av.	Jan.-Mar., 1934	Jan.-Mar., 1933
Arkansas	918	29	853	31	2,727	2,713
California:						
Huntington Beach	1,244	40	1,089	39	3,528	3,154
Kettleman Hills	1,702	55	1,394	50	4,693	5,252
Long Beach	1,930	62	1,606	57	5,342	6,013
Santa Fe Springs	1,299	42	1,157	41	3,739	4,676
Rest of State	8,535	276	7,348	263	24,165	22,888
Total California	14,710	475	12,594	450	41,467	40,982
Colorado	81	3	82	3	251	249
Illinois	394	13	337	12	1,124	874
Indiana	70	2	62	2	194	146
Kansas	4,064	131	3,217	115	10,688	9,336
Kentucky	378	12	330	12	1,070	1,154
Louisiana:						
Gulf Coast	1,337	43	1,230	44	3,918	3,083
Rest of State	798	26	766	27	2,416	2,539
Total Louisiana	2,135	69	1,996	71	6,334	5,622
Michigan	370	28	313	29	2,505	1,269
Montana	214	7	207	7	642	464
New Mexico	1,341	43	1,186	42	3,846	3,202
New York	313	10	246	9	865	765
Ohio:						
Central and Eastern	280	9	225	8	774	800
Northwestern	85	3	56	2	230	239
Total Ohio	365	12	281	10	1,004	1,039
Oklahoma:						
Oklahoma City	5,402	174	4,600	164	15,591	13,632
Seminole	3,278	106	2,890	104	9,479	9,863
Rest of State	6,771	218	6,005	214	19,094	17,496
Total Oklahoma	15,451	498	13,495	482	44,164	40,991
Pennsylvania	1,222	40	952	34	3,326	2,887
Tennessee	.....	....	1	....	2	1
Texas:						
Gulf Coast	4,913	159	4,484	160	14,310	11,963
West Texas	4,090	132	3,601	129	11,685	14,511
East Texas	16,514	500	13,167	470	42,670	38,452
Panhandle	1,671	54	1,471	53	4,468	4,142
Rest of State	5,485	177	4,900	175	15,849	15,867
Total Texas	31,673	1,022	27,623	987	88,982	84,935
West Virginia	364	12	291	10	995	842
Wyoming:						
Salt Creek	565	18	510	18	1,599	1,865
Rest of State	420	13	383	14	1,188	993
Total Wyoming	985	31	893	32	2,787	2,858
Total United States	75,548	2,437	65,450	2,338	212,974	200,329

COMPARATIVE ANALYSES

(Thousands of barrels of 42 gallons)

	March, 1934 Total	March, 1934 Dy.av.	February, 1934*	January, 1934*	Jan.-Mar., 1934	Jan.-Mar., 1933
CRUDE PETROLEUM:						
Runs to stills	71,807	2,316	66,470	71,512	209,789	195,119
MOTOR FUEL:						
Production	33,355	1,076	31,026	34,013	98,393	91,645
Imports	.....	....	.....	1	1	3
Exports†	2,540	82	2,025	1,940	6,505	6,848
Stocks: Gasoline	62,265	....	62,119	58,046	62,265	57,008
Stocks: Nat. gasoline	3,926	....	3,785	3,906	3,926	3,548
Domestic demand	30,528	985	25,048	29,416	84,992	78,049
KEROSENE:						
Production	4,576	148	3,961	4,507	13,044	11,931
Imports	.....	....	.....	.....	.....	.....
Exports	671	22	736	591	1,998	2,173
Stocks	4,986	....	5,299	6,228	4,986	4,827
Domestic demand	4,218	136	4,154	4,245	12,617	9,905
GAS OIL AND FUEL OIL:						
Production	27,864	899	24,656	26,393	78,913	75,452
Transfers‡	679	22	682	1,145	2,506	3,038
Imports:						
Bonded warehouses	362	28	557	1,071	2,490	1,122
For domestic use	319	10	56	125	500	2,099
Exports	2,250	81	2,046	1,738	6,304	3,718
Stocks	106,286	....	111,459	117,288	106,286	123,825
Domestic demand	32,377	1,044	29,734	32,712	94,823	83,139
Railroads (Class 1)§	(‖)	(‖)	3,324	3,632	‖5,956	‖6,407
Pub. util. pow. plants**	824	27	879	909	2,611	1,938
Other	(‖)	(‖)	25,532	28,171	85,256	74,794
Bunker oil	2,716	88	2,331	2,592	7,639	8,132
LUBRICANTS:						
Production	2,152	69	1,865	2,198	6,215	5,242
Imports	.....	....	.....	.....	.....	.....
Exports	793	26	463	766	2,023	1,502
Stocks	6,827	....	7,120	7,020	6,827	8,712
Domestic demand	1,642	53	1,302	1,440	4,386	3,102
WAX (thousands of pounds):						
Production	43,120	1,391	39,200	46,480	128,800	101,080
Imports	2,907	94	5,119	7,641	15,667	7,475
Exports	21,163	683	16,307	18,971	56,441	62,845
Stocks	86,644	....	83,791	78,934	86,644	136,785
Domestic demand	22,011	761	22,155	25,049	70,215	72,553
COKE (short tons):						
Production	125,600	4,052	120,800	127,000	373,400	348,800
Stocks	564,600	....	594,600	637,000	564,600	1,148,500
ASPHALT (short tons):						
Production	155,600	5,019	106,100	144,700	406,400	320,300
Imports (natural)	300	10	700	2,900	3,900	7,300
Stocks	370,500	....	330,600	302,500	370,500	304,400

*Revised. †Includes benzol—13,053 bbls. in March, 1934. ‡Net transfers in California. §Interstate Commerce Commission. ‖Not available. ¶January-February. **U. S. Geological Survey.

GASOLINE PRODUCTION BY THE VARIOUS METHODS, MARCH, 1934

(Thousands of barrels of 42 gallons)

	Straight-run Total	Straight-run Per cent (*)	Straight-run Per cent (†)	Cracked Total	Cracked Per cent (*)	Cracked Per cent (†)	Nat. gaso. Total	Nat. gaso. Per cent (†)	Gasoline Total	Gasoline Per cent (*)
East coast	3,257	22.5	55.8	2,537	17.6	43.4	45	.8	5,839	40.1
Appalachian	698	25.7	51.4	643	23.6	47.3	17	1.3	1,358	49.3
Ind., Ill., etc.	2,170	23.7	49.1	2,716	29.7	54.0	147	2.9	5,033	53.4
Okla., Kans., Mo.	2,119	37.8	48.8	1,805	32.6	41.5	420	9.7	4,344	51.4
Texas Inland	1,481	31.1	58.4	758	16.0	29.9	297	11.7	2,536	47.1
Texas Gulf	2,863	19.9	49.7	2,775	19.3	48.1	128	2.3	5,766	39.2
Louisiana Gulf	823	23.2	60.8	517	14.6	38.2	14	1.0	1,354	37.8
Ark. and La. Inland	345	23.3	48.0	329	22.3	45.7	45	6.3	719	45.6
Rocky Mountain	304	30.3	47.2	274	27.3	42.5	66	10.3	644	57.6
California	2,880	31.2	52.6	1,466	11.5	26.7	957	18.7	5,112	32.7
Total	16,749	23.3	51.2	13,820	19.3	42.3	2,136	6.5	32,705	42.6

*Per cent of crude run. †Per cent of total gasoline output.

STOCKS OF CRUDE PETROLEUM

(Thousands of barrels of 42 gallons)

	March 31, 1934	Feb. 28, 1934	March 31, 1933
EAST OF CALIFORNIA:			
At refineries by location:			
East coast: Domestic	9,173	9,455	8,324
Foreign	2,859	3,203	5,134
Appalachian	1,819	1,755	2,340
Indiana, Illinois, Kentucky, Michigan	4,467	4,241	3,658
Oklahoma, Kansas and Missouri	5,345	6,007	4,483
Texas: Inland	2,226	1,865	1,916
Gulf Coast: Domestic	11,605	11,108	6,426
Foreign	126	197	79
Louisiana Gulf Coast: Domestic	3,732	3,588	2,926
Foreign	551	604	1,021
Arkansas and Inland Louisiana	771	893	450
Rocky Mountain	12,809	12,666	12,132
California	9,144	8,341	11,860
Total	65,527	63,923	60,749
At refineries by origin:			
Pennsylvania Grade	1,502	1,518	2,191
Other Appalachian (inc. Kentucky)	579	580	621
Lima-N. E. Indiana-Michigan	483	506	175
Illinois-S. W. Indiana	154	160	111
N. Louisiana and Arkansas	2,706	2,569	2,073
West Texas and S. E. New Mexico	4,007	3,845	4,467
East Texas	9,518	9,500	
Oklahoma, Kansas, N. Texas, etc.	15,923	15,057	16,696
Gulf Coast	5,193	5,203	4,218
Rocky Mountain	12,782	12,640	12,103
California	9,144	8,341	11,860
Foreign	3,536	4,004	6,234
Total	65,527	63,923	60,749
Pipe line and tank farm:			
Pennsylvania Grade	3,738	3,675	4,599
Other Appalachian (inc. Kentucky)	909	903	986
Lima-N. E. Indiana-Michigan	1,247	1,247	692
Illinois-S. W. Indiana	11,100	11,052	11,318
N. Louisiana and Arkansas	8,597	8,969	11,363
West Texas and S. E. New Mexico	26,369	27,161	30,797
East Texas	36,092	36,034	
Oklahoma, Kansas, N. Texas, etc.	141,806	139,381	160,742
Gulf Coast	10,143	10,750	9,931
Rocky Mountain	15,192	15,110	16,031
California	24,949	25,009	28,049
Total	280,142	279,291	274,509
Lease (producers') stocks	8,398	8,427	*8,450
Total refinable crude in the U. S.	354,067	351,641	341,708

*East of California only.

STOCKS OF CRUDE PETROLEUM BY STATES AND BY LOCATION

(Thousands of barrels of 42 gallons)

	March 31, 1934 Refinery	March 31, 1934 Pipe line	March 31, 1934 Lease	March 31, 1934 Total	February 28, 1934 Refinery	February 28, 1934 Pipe line	February 28, 1934 Lease	February 28, 1934 Total
Arkansas	549	4,173	390	5,112	570	4,368	390	5,328
California	9,144	24,949	1,749	35,842	8,341	25,009	1,798	35,148
Colorado	250	58	14	322	244	78	18	340
Georgia*	577	..	..	577	604	..	..	604
Illinois	1,372	10,577	85	12,034	1,189	10,531	117	11,837
Indiana	1,361	1,814	8	3,183	1,297	1,621	8	2,926
Kansas	1,914	12,846	381	15,141	1,837	12,572	362	14,771
Kentucky†	425	588	76	1,089	434	593	77	1,104
Louisiana‡	4,505	7,362	227	12,094	4,616	7,100	230	11,845
Maryland	1,423	..	..	1,423	1,416	..	..	1,416
Massachusetts§	1,316	..	..	1,316	1,359	..	..	1,359
Michigan	276	755	70	1,101	317	756	75	1,148
Missouri¶	148	3,468	..	3,616	148	3,417	..	3,565
Montana	242	429	70	741	197	394	75	666
New Jersey	4,903	308	..	5,211	5,067	332	..	5,399
New Mexico	6	286	186	478	6	283	190	479
New York	1,648	107	17	1,772	1,729	115	17	1,861
Ohio	1,287	7,485	118	8,890	1,248	7,534	120	8,902
Oklahoma	4,183	81,224	1,652	87,059	4,022	79,894	1,590	85,506
Pennsylvania	3,667	1,839	99	5,605	3,943	1,732	95	5,770
Texas	13,957	105,023	2,730	121,710	13,170	106,175	2,750	122,095
Utah	328	..	..	328	291	..	..	291
West Virginia	63	2,179	140	2,382	52	2,184	135	2,371
Wyoming‖	11,983	14,672	386	27,041	11,928	14,603	380	26,911
U. S. TOTAL	65,527	280,142	8,398	354,067	63,923	279,291	8,427	351,641

*Includes South Carolina and Virginia. †Includes Tennessee. ‡Includes Alabama. §Includes Rhode Island. ¶Includes Iowa. ‖Includes Nebraska and South Dakota.

PRODUCTION OF CRUDE PETROLEUM BY DISTRICTS

(Thousands of barrels of 42 gallons)

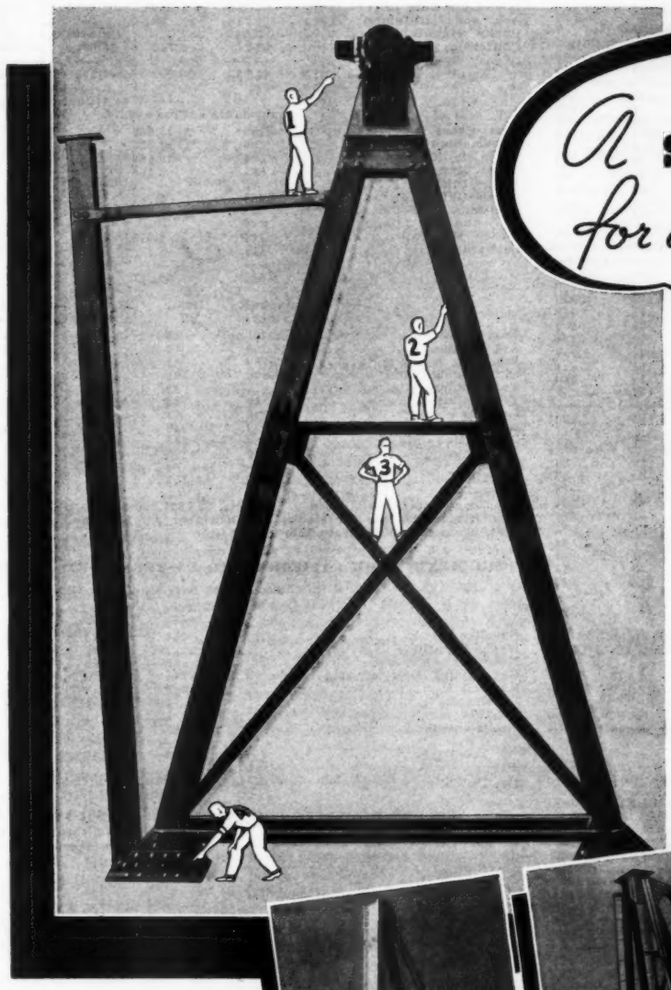
	March, 1934 Total	March, 1934 Daily av.	February, 1934 Total	February, 1934 Daily av.	Jan.-Mar., 1934	Jan.-Mar., 1933
Appalachian:						
Pennsylvania Grade	2,036	66	1,599	57	5,568	4,872
Other (inc. Kentucky)	521	17	446	16	1,464	1,577
Lima-N. E. Ind. Mich.	955	31	869	31	2,735	1,511
Ill.-S. W. Ind.	464	15	389	14	1,318	1,017
Mid-Continent:						
N. La. and Ark.	1,716	55	1,619	58	5,143	5,252
W. Texas-S. E. N. Mex.	5,396	174	4,751	170	15,427	17,634
East Texas	15,514	500	13,167	470	42,670	38,452
Other (Okla., Kans., N. Tex., etc.)	26,671	860	23,033	825	75,169	70,336
Gulf Coast	6,250	202	5,714	204	18,228	15,046
Rocky Mountain	1,315	42	1,219	43	3,785	3,650
California	14,710	475	12,594	450	41,467	40,982
Total	75,548	2,437	65,450	2,338	212,974	200,329

INDICATED DOMESTIC DEMAND FOR CRUDE PETROLEUM

(Thousands of barrels of 42 gallons)

Domestic petroleum by fields of origin:	March, 1934 Total	March, 1934 Daily av.	February, 1934 Total	February, 1934 Daily av.	Jan.-Mar., 1934	Jan.-Mar., 1933
Appalachian:						
Pennsylvania Grade	1,982	64	1,994	71	5,892	5,047
Other (inc. Kentucky)	517	17	390	14	1,402	1,496
Lima-N. E. Ind.-Mich.	983	32	825	29	2,772	1,922
Ill.-S. W. Ind.	454	15	531	19	1,275	926
Mid-Continent:						
N. La. and Ark.	1,950	63	1,950	70	5,596	5,729
W. Texas-S. E. N. Mex.	6,060	195	5,559	199	17,845	18,364
East Texas	15,428	497	12,927	462	43,171	102,375
Other (Okla., Kans., N. Tex., etc.)	23,329	752	22,988	857	72,019	
Gulf Coast	6,841	221	6,138	219	18,826	17,443
Rocky Mountain	1,094	35	1,015	36	3,290	3,243
California	12,767	412	12,440	444	39,010	37,671
Total demand	71,405	2,303	67,757	2,420	211,199	194,227
Exports	2,582	83	2,511	90	7,881	5,960
Domestic demand	68,823	2,220	65,246	2,330	203,318	188,267
Foreign petroleum	2,878	93	2,074	74	7,760	9,373
Total domestic demand	71,701	2,313	67,320	2,404	211,078	197,640

(Continued on Next Page)

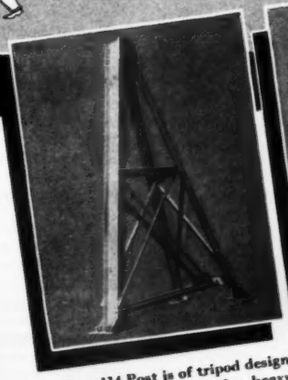


A SAMSON POST for every PURPOSE

The Moore 90 Series Samson Post is a simple A-frame type which meets the requirements of the most severe pumping and drilling conditions. It is designed to accomodate either A. P. I. side irons and saddle or Moore oil bath side irons with an A. P. I. saddle (1). The legs (2) are of heavy I-beam sections, 14" @ 34#. The post is adequately cross braced (3) with 3" x 3" x ¼" angles. The large base plates (4) reduce the bearing pressure on concrete.

Moore Samson Posts are stocked in A. P. I. heights. Special posts to your order.

LEE C. MOORE & CO. INC.
TULSA · PITTSBURGH
Dallas · Houston · Henderson · Kilgore · Longview
Pampa, Texas; Wichita, Kansas
Stocks in all active fields



Type 114 Post is of tripod design intended, primarily, for heavy duty pumping service.

Type 65, also a tripod post, has vertical front legs, to clear a production hoist.

Type 111 is a tripod post for drilling service. The bracing is designed to permit spudding with a manila rope between the back legs and around the front post.

Moore PUMPING Equipment

STEEL DERRICKS SINCE 1908

DERRICKS · SUBSTRUCTURES · HANGERS · WALKING BEAMS
SAMSON POSTS · JACK POSTS · BULL AND CALF WHEEL POSTS
WHEELS · PITMANS · IMPROVED BEARINGS · CROWN BLOCKS
PORTABLE PUMPING UNITS · CLEAN-OUT MACHINES · WINCHES

NUMBER OF WELLS COMPLETED IN THE UNITED STATES*

	March, 1934	February, 1934	March, 1933	Jan.-Mar., 1934	Jan.-Mar., 1933
Oil	930	810	496	2,650	1,664
Gas	78	94	57	282	215
Dry	279	286	291	897	890
Total	1,287	1,190	844	3,829	2,769

*From The Oil and Gas Journal and California office of American Petroleum Institute.

RUNS TO STILLS AND OUTPUT OF REFINERIES, MARCH, 1934

(Thousands of barrels of 42 gallons)

	Crude oil			Unfin. rerun (net)‡		Natural
INPUT—	Domestic	Foreign	Total	Crude gaso.	Other	gasoline
East Coast	11,734	2,730	14,464	168	—129	45
Appalachian	2,720	.....	2,720	—28	274	17
Ind., Ill., Ky., etc.	9,146	.....	9,146	20	259	147
Okla., Kans., Mo.	7,637	.....	7,637	15	1	420
Texas Inland	4,756	.....	4,756	—9	59	297
Texas Gulf	14,298	73	14,371	51	—227	128
Louisiana Gulf	3,425	117	3,542	62	—9	14
Ark. and La. Inland	1,479	.....	1,479	—3	55	45
Rocky Mountain	1,004	.....	1,004	25	40	66
California	12,688	.....	12,688	—60	68	*961
Total	68,887	2,920	71,807	241	391	2,140

OUTPUT—	Gasoline‡	Kerosene	Gas oil and distillate fuels‡	Residual fuel oil‡	Lubricants	Wax (thous. of pounds
East Coast	5,839	923	1,879	4,057	586	22,120
Appalachian	1,358	289	295	365	411	7,280
Ind., Ill., Ky., etc.	5,033	333	992	1,800	197	3,920
Okla., Kans., Mo.	4,344	504	673	1,509	256	2,520
Texas Inland	2,536	319	288	1,503	25	280
Texas Gulf	5,766	1,213	1,834	3,754	471	4,480
Louisiana Gulf	1,354	412	371	1,166	30	1,960
Ark. and La. Inland	719	66	67	552	11	.....
Rocky Mountain	644	52	73	192	18	560
California	5,112	465	1,622	5,641	147	.....
Total	†32,705	4,576	8,004	20,539	2,152	43,120

OUTPUT (Cont.)—	Coke (tons)	Asphalt (tons)‡	Road oil‡	Still gas	Miscellaneous	Shortage
East Coast	13,600	55,400	28	671	30	83
Appalachian	1,400	10,400	—20	174	24	87
Ind., Ill., Ky., etc.	54,800	32,700	45	725	7	—28
Okla., Kans., Mo.	20,000	1,300	18	357	32	264
Texas Inland	4,400	.....	24	99	—1	287
Texas Gulf	21,800	11,800	13	791	20	271
Louisiana Gulf	2,600	10,700	.....	149	.....	48
Ark. and La. Inland	200	10,000	18	39	2	46
Rocky Mountain	6,600	1,300	41	56	3	14
California	200	22,000	77	368	§16	87
Total	125,600	155,600	244	3,429	133	1,159

*Includes 119,000 bbls. run through pipe lines. †Includes 407,000 bbls. special naphthas. ‡Revised figures production for January and February, 1934, given in Revised Data table. §Includes 4,000 bbls. liquefied petroleum gas made from natural gasoline.

CRACKED OPERATIONS

Fresh cracking stock charged to stills—crude, 3,925,000 bbls.; other oils, 29,622,000 bbls.; gasoline produced by cracking, 13,820,000 bbls.; fuel oil produced by cracking, 14,311,000 bbls.

SUPPLY AND DEMAND OF ALL OILS

(Thousands of barrels of 42 gallons)

NEW SUPPLY:	March, 1934	February 1934*	January, 1934*	Jan.-Mar., 1934	Jan.-Mar., 1933
Domestic production:					
Crude petroleum	75,548	65,450	71,976	212,974	200,329
Daily average	2,437	2,338	2,321	2,366	2,226
Natural gasoline	3,019	2,795	3,024	8,838	8,190
Benzol†	159	132	130	421	271
Total production	78,726	68,377	75,130	222,233	208,790
Daily average	2,540	2,442	2,424	2,469	2,320
Imports:					
Crude petroleum	‡2,410	‡3,031	‡2,800	8,241	9,003
Refined products	1,193	635	1,244	3,072	4,296
Total new supply, all oils	82,329	72,043	79,174	233,546	222,089
Daily average	2,656	2,573	2,554	2,595	2,468
Decrease in stocks, all oils	3,745	3,971	4,478	12,194	§4,987
DEMAND:					
Total demand	86,074	76,014	83,652	245,740	217,102
Daily average	2,777	2,715	2,698	2,730	2,412
Exports:					
Crude petroleum	2,582	2,511	2,288	7,381	5,960
Refined products	6,771	5,423	5,281	17,475	16,214
Domestic demand:					
Motor fuel	30,528	25,048	29,416	84,992	78,049
Kerosene	4,218	4,154	4,245	12,617	9,905
Gas oil and fuel oil	32,377	29,734	32,712	94,823	83,139
Lubricants	1,643	1,302	1,440	4,385	3,103
Wax	78	82	89	250	258
Coke	736	805	1,056	2,597	2,595
Asphalt	512	359	402	1,273	1,420
Road oil	317	151	165	633	262
Still gas (production)	3,429	3,050	3,457	9,936	9,506
Miscellaneous	193	147	41	381	336
Losses and crude used as fuel	2,690	3,247	3,060	8,997	6,355
Total domestic demand	76,721	68,080	76,083	220,884	194,928
Daily average	2,475	2,431	2,454	2,454	2,166
STOCKS:					
Crude petroleum	354,067	351,641	353,642	354,067	341,708
Natural gasoline	3,926	3,785	3,906	3,926	3,548
Refined products	232,026	238,338	240,187	232,026	247,840
Total, all oils	590,019	593,764	597,735	590,019	593,096
Days' supply	213	219	223	216	246

*Revised. †From Coal Division. ‡Receipts of foreign crude as reported to Bureau of Mines. §Increase.

RECEIPTS OF FOREIGN CRUDE PETROLEUM

(Thousands of barrels of 42 gallons)

Atlantic seaboard:	March, 1934	Feb., 1934
Venezuela	1,623	1,797
Colombia	510	304
Mexico	186	678
Gulf coast:		
Mexico	91	146
Venezuela	..	106
Total	2,410	3,031

SHIPMENTS OF MOTOR FUEL BY PIPE LINES

(Thousands of barrels of 42 gallons)

	Mar., 1934	Feb., 1934	Mar., 1933	Jan.-Mar., 1934	Jan.-Mar., 1933
Motor fuel turned into lines	3,448	2,984	2,821	9,706	7,631
Motor fuel delivered from lines	3,333	2,951	2,800	9,641	7,539
Shortage	9	9	2	24	8
Stocks in lines and working tanks end of month	1,356	1,250	1,283	1,356	1,283

STOCKS HELD BY REFINING COMPAINES, MARCH 31, 1934

(Thousands of barrels of 42 gallons)

	Gasoline*				Gas oil and distillate fuels	Residual fuel oils
	At refineries	Bulk and pipe lines	Total	Kerosene		
East Coast	7,415	11,282	18,697	792	1,613	3,688
Appalachian	1,630	785	2,415	259	174	188
Ind., Ill., Ky., etc.	7,190	2,878	10,068	558	1,296	1,475
Okla., Kans., Mo.	4,534	1,819	6,353	541	951	1,765
Texas Inland	1,644	142	1,786	117	219	1,356
Texas Gulf	5,162	814	5,976	855	2,192	2,732
Louisiana Gulf	1,136	560	1,696	255	856	1,906
Ark. and La. Inland	283	60	343	28	250	963
Rocky Mountain	1,540	...	1,540	226	180	371
California	11,249	2,142	13,391	1,355	2,927	81,584
Total	41,783	20,482	62,265	4,986	10,658	95,628

	Lubricants	Wax (thousands of pounds) Crude scale	Refined	Total	Coke (tons)
East Coast	2,260	15,863	17,865	33,728	9,000
Appalachian	796	11,525	1,953	13,478	3,500
Ind., Ill., Ky., etc	567	10,652	1,565	12,217	81,600
Okla., Kans., Mo.	565	2,509	820	3,329	71,000
Texas Inland	93	....	371	371	60,400
Texas Gulf	1,484	2,381	12,022	14,403	130,600
Louisiana Gulf	83	246	665	911	4,300
Ark. and La. Inland	17	..	...	...	100
Rocky Mountain	127	7,075	1,132	8,207	103,700
California	845	....	....	...	100,400
Total	6,837	50,251	36,393	86,644	564,600

	Asphalt (tons)	Road oil	Miscellaneous	Unfinished oils* Crude gaso.	Other	Natural gasoline
East Coast	122,700	38	49	1,434	7,104	228
Appalachian	16,700	9	23	262	1,828	7
Ind., Ill., Ky., etc.	87,200	41	10	1,157	5,508	40
Okla., Kans., Mo.	6,800	189	16	935	4,539	41
Texas Inland	.....	19	6	487	1,010	8
Texas Gulf	13,900	32	15	2,818	9,909	200
Louisiana Gulf	30,200	15	.....	273	1,399	.....
Ark. and La. Inland	37,900	40	3	63	249	6
Rocky Mountain	3,900	238	11	165	1,753	10
California	51,200	171	65	840	3,709	2,354
Total	370,500	792	198	8,484	37,008	2,894

Grand total stocks refined products, 232,821,000 bbls.

*Revised figures for stocks for December 31, 1933, and January 31 and February 28, 1934, are given in separate table.

SHIPMENTS FROM CALIFORNIA TO EASTERN PORTS IN THE UNITED STATES

(Thousands of barrels of 42 gallons)

	March, 1934	February, 1934	March, 1933	Jan.-Mar., 1934	Jan.-Mar., 1933
Gasoline	758	193	596	1,422	1,844
Natural gasoline	.....	.....	.....	.....	81
Kerosene	80	262	...	547	629
Gas oil and Diesel oil	245	270	149	1,025	1,127
Fuel oil	1,083	1,454	145	3,907	376
Lubricants	1	1	.....	11	8
Asphalt	1	.....	.....	2	.....
Miscellaneous	15	2	72	18	105
Total	2,183	2,182	962	6,932	4,170

*Compiled by E. T. Knudsen of the San Francisco office of the Bureau of Mines.

RECORD OF WELLS FOR IMPORTANT FLUSH FIELDS, MARCH, 1934*

	Completions Oil	Gas	Dry	Total initial prod. (bbls.)	Aver. initial prod. (bbls.)	Drilling March 31
Texas	499	14	120	811,200	1,600	1,056
East Texas	240	1	2	552,000	2,300	251
Gulf Coast	77	4	30	56,800	740	158
Conroe	25	1	4	37,000	1,480	12
Greta	9	...	3	1,800	200	16
West Texas	20	...	9	164,700	8,230	132
California	25	...	9	31,000	1,240	183
Kettleman Hills	1	...	...	21,000	21,000	24
Long Beach	11	...	...	3,000	270	30
Huntington Beach	1	...	...	400	400	4
Oklahoma	124	11	45	79,800	640	421
Oklahoma County	2	...	...	3,000	1,500	20
Pottawatomie and Seminole Counties.	13	...	7	5,400	400	56
New Mexico	4	2	...	3,200	800	58
Lea County (Hobbs)	4	...	...	3,200	800	8
Other states	278	51	95	57,100	200	1,050
Total United States	930	78	279	982,300	1,000	2,768

*From The Oil and Gas Journal and California office of American Petroleum Institute.

REVISED DATA FOR PRODUCTION FOR JANUARY AND FEBRUARY, 1934

The changes in definitions as noted under heading "Revised Data for Stocks for January 1, January 31 and February 28, 1934" necessitated revising the production figures for gasoline, unfinished oils, gas oil and fuel oil. The revised data for these products as given below replace the figures given in the Monthly Petroleum Statements for January and February. A few additional revisions not caused by the change in definitions are also given.

(Thousands of barrels)

	Gasoline January	Gasoline February	Unfin. gaso. (net) January	Unfin. gaso. (net) February	Other unfin. oils January	Other unfin. oils February
East Coast	6,086	4,891	461	—88	—442	—100
Appalachian	1,435	1,313	3	27	97	203
Ind., Ill., Ky., etc.	4,950	5,217	—135	128	37	—145
Okla., Kans., Mo.	4,342	4,092	—128	—54	65	—95
Texas Inland	2,705	2,510	16	—23	—23	165
Texas Gulf	6,117	5,046	139	—299	198	—538
Louisiana Gulf	1,365	1,184	—22	—48	35	17
Ark. and La. Inland	685	684	—11	11	23	70
Rocky Mountain	702	559	—9	—30	14	52
California	5,675	4,976	—24	—55	79	—2
Total	33,462	30,472	289	—431	83	—373

	Gas oil and distillate fuels January	Gas oil and distillate fuels February	Residual fuel oils January	Residual fuel oils February	Asphalt (tons) January	Asphalt (tons) February	Road oil January	Road oil February
East Coast	1,542	1,510	3,719	3,879	61,500	32,500	30	11
Appalachian	168	260	287	282	4,200	5,100	8	8
Ind., Ill., Ky., etc.	975	802	1,405	1,237	35,600	31,200	24	32
Okla., Kans., Mo.	589	476	1,369	1,444	1,700	700	12	5
Texas Inland	277	270	1,489	1,532	.....	.....	5	6
Texas Gulf	2,115	1,618	3,623	3,292	13,800	11,700	10	8
Louisiana Gulf	185	337	1,130	1,116	9,300	4,500	.....	3
Ark. and La. Inland	161	122	565	581	9,600	8,900	16	17
Rocky Mountain	52	66	252	252	600	.....	31	1
California	1,627	1,692	6,008	4,567	10,400	11,400	55	66
Total	7,691	7,155	19,847	18,183	144,700	106,100	191	158

(Continued on Next Page)

REVISED DATA FOR STOCKS FOR JANUARY 1, JANUARY 31 AND FEBRUARY 28, 1934

Beginning with March, 1934, the Bureau's definitions of finished gasoline, unfinished gasoline, and other unfinished oils were changed from those adopted January 1, 1934, making it advisable to obtain data for January 1, January 31 and February 28 on the new basis. The revised data for the three products as given below replace the figures given in the Monthly Petroleum Statements for January and February. Additional revisions for California are also given.

(Thousands of barrels)

	Finished gasoline at refineries			Unfinished gasoline			Other unfin. oils		
	Jan. 1	Jan. 31	Feb. 28	Jan. 1	Jan. 31	Feb. 28	Jan. 1	Jan. 31	Feb. 28
East Coast	5,479	6,115	7,190	1,683	1,241	1,267	7,174	7,458	7,249
Appalachian	1,544	1,597	1,718	264	261	234	1,793	1,950	1,936
Ind., Ill., Ky., etc.	4,398	5,260	6,512	1,196	1,263	1,160	5,571	5,411	5,453
Okla., Kans., Mo.	4,032	4,099	4,506	791	988	1,017	4,598	4,656	4,854
Texas Inland	1,489	1,437	1,649	471	455	478	1,211	1,234	1,069
Texas Gulf	4,446	4,796	5,151	2,668	2,510	2,871	9,210	8,916	9,574
Louisiana Gulf	1,462	1,450	1,275	265	287	335	1,442	1,407	1,390
Ark.-La. Inland	217	183	262	60	71	60	297	374	304
Rocky Mt.	1,501	1,566	1,609	151	160	190	1,359	1,845	1,793
California	10,192	11,271	11,980	1,034	1,053	1,113	3,854	3,775	3,777
Total	34,760	37,774	41,852	8,583	8,294	8,725	37,109	37,026	37,399

	Bulk terminal and pipe line gasoline	Gas oil and distillate fuels	Residual fuel oil	Miscellaneous	Natural gasoline at refineries
California:					
January 1	2,317	3,638	89,029	78	2,183
January 31	2,089	3,230	86,939	88	.....
February 28	2,022	3,205	84,063	68	.....
United States:					
January 1	20,848	16,315	106,689	216	2,688
January 31	20,272	14,215	103,073	291	.....
February 28	20,267	12,563	98,896	262	.....

Cost of Percolating Filtration in Refineries

(Continued from Page 49)

clean separation is not so important here as the need for increasing filter turnover.

Space does not permit an exhaustive discussion of the washing process. Suffice it to say that, from a revivification standpoint, the washed clay should contain no naphtha and not more than 1 per cent of viscous oil. Naphtha used for washing should be low priced and of relatively narrow distillation range. Naphtha of 150° F. initial point and 380° F. endpoint would be considered satisfactory. The practice of pumping naphtha through a filter without intermediate soaking and steaming is very wasteful. It is important to maintain a strict accounting of naphtha used for each filter turnover. The naphtha loss in the entire filtering and recovery process should not exceed 1½ per cent. The loss of viscous oil, in general, should not exceed 2 per cent of the oil charged. Steam used in steaming the clay should not exceed 1,000 pounds per ton of clay.

It will be found very desirable to maintain accurate filter records. These records can be forwarded for supervisory consideration daily. However, it is a much better practice to summarize the data weekly in such a way as to demonstrate trends. An example of daily filter house record is shown in Figure 2.

Where the clay is to be used in vapor or liquid-phase treatment of naphthas, the operation must be adapted to this specific process. A recent article entitled "Distillate Treating Now Highly Developed and Simplified"[2] describes this subject in detail; and will, therefore, not be further discussed here.

The handling and storage of the filtered oil deserves consideration. It is often advantageous where the oil is filtered hot, to pass it through coolers immediately after filtration—before reaching storage.

4. Burning and Revivification of Earth.

Not enough attention has been paid by most refiners to the question of burning and revivification of earth. Efficiency in revivification is not measured by the number of times a clay is re-used, in spite of the somewhat too prevalent idea. It has been found that some refiners have been using clays 35 to 40 times before discarding, whereas they would be far better off had the clay been discarded after 8 or 10 burns. A factor which has tended to cloud the case, in such instances, is the use of new clay for make-up—thus effecting higher levels of efficiency than otherwise would have been the case.

Even with optimum clay burning it has, in general, been proved that the lowest cost is reached after comparatively few burns. The reason for this may readily be understood when it is considered that the average material cost for earth when revivified 10 times is about $3 per ton for each turnover, including cost of make-up clay.

The mechanics of determining the point at which clay is to be discarded varies for individual conditions. A careful study must first be made to establish the relative clay efficiencies (assuming new burned clay equals 100 per cent) up to point of discarding. This work can best be done by laboratory evaluation of plant-burned clays. From these efficiences the cost of clay for any given number of uses can be established as shown in Table 2. Filter-turnover costs must then be calculated as in Table 1, applying the foregoing clay cost. In addition to items included in filter-turnover costs there should be a debit for viscosity-oil loss to clay or degradation. The total unit cost for any given number of uses may then be determined in a manner similar to the example shown above. When the final unit cost of a product for a given number of revivifications is found to be but a fraction of a cent different from the cost for lesser number of revivifications, it is generally advantageous, from the refiner's point of view, to discard clay at the earlier point in order to obtain greater throughput, and, in some instances, somewhat higher quality of product as a result of employing the younger and more efficient clay.

The conditions for burning granular clay, whether new or used, must be such as to avoid local overheating. In any case, the adsorbent should not come into direct contact with fire from the furnace. The time, temperature and atmospheric conditions in burning clay should be such as to permit the complete removal of organic compounds, together with uncombined water—without releasing the combined water or altering physical structure or chemical composition. Temperatures employed for revivifying clays in refinery practice vary from 900° F. to 1,350° F. Time of clay contact with heat is found to vary from one-half minute to four hours. Strangely enough, those practicing the extremes seem equally assured of optimum operation.

Carefully carried out experimental tests on used clay indicate that best results can be obtained when maintaining a temperature of 1,100° F. to 1,200° F. (clay temperature) for a period of at least 15 minutes in a relatively rich oxidizing atmosphere.

Raw clay, in general, may be satisfactorily burned when maintaining temperatures of clay not exceeding 900° F. for at least 15 minutes. By "clay temperature" is meant the actual temperature as determined by thermocouples moving in the clay. While it is possible to establish a rough correlation from gas temperatures in the kiln, or from stationary thermocouples resting in the clay, such procedure cannot be depended upon.

An important factor in obtaining results in percolation clays is to avoid storage following the burning of the clay. Best results are obtained when the clay is conveyed directly to the filters.

An outstanding refinement which is being applied at the present time in some refineries is technical control of the clay-burning operations. This is done by application of standard methods of tests to the clay before and after burning. These tests include: (1) determination of oil content of unburned clay; and (2) determination of volume weight and volatile content of the burned clay. The relation of weight and volatile content of a given bleaching medium has been found to correlate very closely to the bleaching efficiency. Increase in weight with revivification should be held to a minimum. As a matter of added protection, it is desirable to make periodic laboratory pilot percolation tests using standardized percolation methods. In this connection, recent studies have definitely proved that results of tests carried out in accordance with standard laboratory equipment check very closely with those obtained under similar conditions in plant percolation filters.

In general, a raw clay should be burned to a volatile content of 4 per cent. With this volatile content the actual weight in pounds per cubic foot, as determined by standard tests, will range between 33 pounds and 36 pounds for the average Florida-George 30/60 mesh clay. The volatile content of used clays after burning should not be less than 2 per cent.

Another step in control of efficiencies, in the clay-burning operation, is the maintenance of accurate records. A form of clay-burning record is shown in Figure 3.

5. Other Considerations.

In the selection of a method of manufacture it is essential that a study be made for purposes of obtaining the optimum combination for processing a given oil. For instance, it may be desirable to combine acid treating with percolation or contacting with percolation.

When color is partly removed in cylinder stocks preliminary to dewaxing and finally removed in finishing after dewaxing, it is important to determine the optimum amount of color to be removed in the respective decolorization steps. Such a determination can be made by means of a combination of experimental data with cost analysis such as has been presented in the foregoing discussion.

Future Trends

When one considers the percolation process and its potentialities in the light of recent developments, it is difficult to see how the possessor of a percolation plant can afford to scrap his equipment, thereby sacrificing the inherent flexibility and capacity to obtain high quality product at low cost. Both the percolation and contacting methods have merits which should be evaluated on the basis of individual requirements. It is felt that the logical trend in future processing will be directed towards a combination of the percolation and contacting methods.

[2] M. B. Cooke and A. W. Hayford, Refiner Natural Gasoline Mfr., 13, No. 3, 83 (1934).

Summary of Operations During April in All the Fields, Excepting California

SUMMARY OF ALL FIELDS

Completions

	Comp.	Prod.	Dry	Gas
Eastern	170	633	10	14
Lima	11	60	6	1
Central Ohio	28	315	6	13
Indiana	10	15	5	2
Illinois	2	7	0	1
Kentucky	3	536	2	0
Michigan	30	14,435	7	1
Kansas	72	20,860	20	1
Oklahoma	144	72,800	34	12
North Central Texas	175	16,212	69	2
Texas Panhandle	24	5,883	2	2
West Texas	25	85,115	3	1
East Texas	247	14,740	5	0
East Central Texas	6	329	1	1
East Texas gas area	3	...	2	1
Gulf Coast Texas	72	36,168	17	4
Southwest Texas	99	14,251	44	9
Gulf Coast Louisiana	36	17,997	8	0
North Louisiana	24	850	11	2
Mississippi	4	...	2	2
Arkansas	5	100	4	0
Montana	14	630	6	0
Wyoming	3	...	1	2
Colorado	1	...	1	0
New Mexico	6	13,328	1	1
Total April	1,219	318,314	262	72
Total March	1,253	413,939	270	78
Difference	34	95,625	8	6

Rigs and Wells Drilling

	Rigs	Drig.	Ttl.
Eastern	70	173	243
Lima	2	24	26
Central Ohio	33	114	147
Indiana	1	39	40
Illinois	2	11	13
Kentucky	0	45	45
Michigan	99	138	237
Kansas	43	127	170
Oklahoma	109	399	508
North Central Texas	64	203	267
Texas Panhandle	39	104	143
West Texas	61	127	188
East Texas	75	262	337
East Central Texas	19	40	59
East Texas gas area	3	11	14
Gulf Coast Texas	31	179	210
Southwest Texas	22	133	155
Gulf Coast Louisiana	14	71	85
North Louisiana	62	94	156
Arkansas	10	28	38
Alabama	0	1	1
Mississippi	6	12	18
Montana	11	42	53
Wyoming	13	71	84
Colorado	3	45	48
New Mexico	12	55	67
Utah	1	14	15
Total April	805	2,562	3,367
Total March	772	2,595	3,367
Difference	33	33	10

Kansas Fields

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Harvey	8	4,834	0	0
McPherson	16	5,432	3	0
Reno	8	3,960	2	1
Ellis	1	100	0	0
Ellsworth	1	0	1	0
Russell	1	80	0	0
Rice	6	3,741	3	0
Butler	4	40	2	0
Stafford	3	1,046	1	0
Kingman	3	873	1	0
Greenwood	10	413	2	0
Elk	3	191	0	0
Woodson	3	140	1	0
Cowley	4	0	4	0
Chautauqua	1	10	0	0
Total April	72	20,860	20	1
Total March	69	31,583	14	1
Difference	3	10,723	6	0

Rigs and Wells Drilling

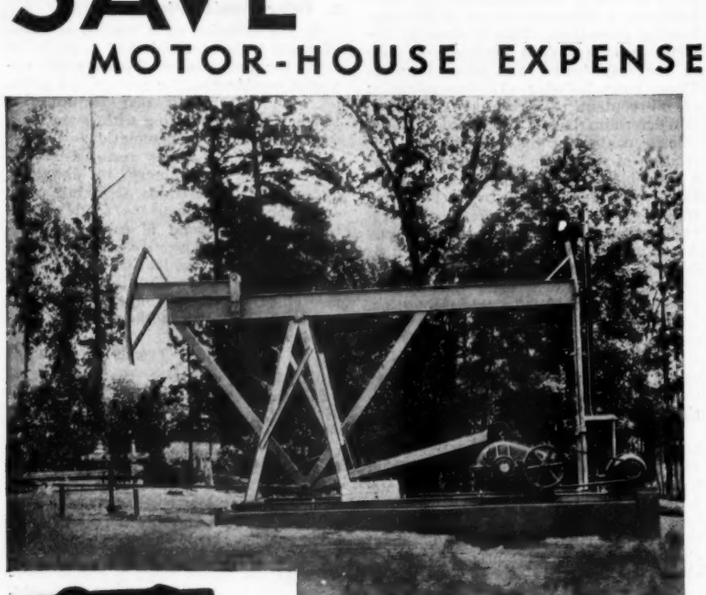
County—	Rigs	Drg.	Ttl.
Barton	2	2	4
Butler	2	10	12
Cowley	1	2	3
Dickinson	0	1	1
Elk	1	2	3
Ellis	0	1	1
Ellsworth	0	2	2
Finney	0	1	1
Greenwood	3	4	7
Harper	0	1	1
Harvey	2	12	14
Kingman	1	2	3
McPherson	12	34	46
Phillips	0	1	1
Reno	3	11	14
Rice	9	26	35
Rooks	0	2	2
Rush	0	2	2
Russell	1	8	9
Sedgwick	4	5	9
Stafford	0	2	2
Sumner	1	2	3
Trego	1	4	5
Total April	43	137	180
Total March	35	134	169
Difference	8	3	11

Oklahoma Fields

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Osage	30	19,732	7	1
Creek	15	598	1	0
Lincoln	14	9,412	3	0
Oklahoma	3	9,324	0	0
Seminole	7	2,462	2	0
Pottawatomie	9	3,413	2	0
Noble	7	12,839	1	0
Payne	1	694	0	0
Logan	3	10,327	0	0
Pontotoc	8	2,210	0	1
Okmulgee	10	241	3	1
Tulsa	10	290	5	2
Carter	4	100	1	0
Kay	1	0	0	1
Garfield	1	15	0	0
Dewey	1	0	1	0
Muskogee	3	0	3	0
Okfuskee	5	0	1	4
Hughes	2	35	0	0
Garvin	2	0	2	0
Marshall	3	105	0	0
Pittsburgh	1	0	0	1
Stephens	1	2	0	0

SAVE
MOTOR-HOUSE EXPENSE



G-E splash-proof motor installed outdoors on a Uni-V pumping unit in the East Texas oil field

Typical G-E splash-proof induction motor

G-E waterproof combination magnetic switch. Ideal for outdoor installation

Install
G-E MOTORS and CONTROL OUTDOORS
On Your East Texas Wells

IN East Texas, you don't have to build a house for your pumping drives. Equip your pumpers with G-E motors and control installed outdoors.

The special construction of G-E splash-proof motors prevents the entrance of liquids or foreign material which may fall on the motors.

The G-E waterproof combination magnetic switch — a line switch and a magnetic starter, housed in a single cast-iron case—is designed particularly for outdoor service.

The complete line of G-E motors for oil-field service includes gear-motors, available with splash-proof protection; explosion-proof motors; double- and triple-rated motors; in fact, the RIGHT MOTOR and the RIGHT CONTROL for every well-pumping drive. General Electric, Dept. 6A-201, Schenectady, N. Y.

GENERAL ELECTRIC

020-24

Wagoner	1	0	0	1
Beckham	2	0	2	0
Total April	144	72,800	34	12
Total March	180	79,831	45	11
Difference	36	7,031	11	1

Rigs and Wells Drilling

County—	Rigs	Drg.	Ttl.
Alfalfa	0	1	1
Atoka	0	8	8
Beckham	0	2	2
Blaine	0	1	1
Caddo	0	4	4
Carter	4	16	20
Cleveland	1	0	1
Comanche	0	5	5
Choctaw	0	1	1
Cotton	0	1	1
Creek	15	53	68
Ellis	0	1	1
Garvin	1	3	4
Greer	0	1	1
Garfield	0	2	2
Hughes	1	15	16
Jefferson	2	5	7
Kay	1	1	2
Kingfisher	0	1	1
Kiowa	0	1	1
Lincoln	2	14	16
Logan	2	6	8
Muskogee	0	2	2
Marshall	2	3	5
Murray	0	1	1
McClain	0	1	1
Noble	3	15	18
Grant	1	0	1
Okmulgee	4	23	27
Oklahoma	13	32	45
Okfuskee	3	9	12
Osage	25	61	86
Pottawatomie	16	31	47
Pontotoc	3	23	26
Pittsburgh	2	4	6
Pushmataha	0	1	1
Payne	1	6	7
Pawnee	0	2	2
Seminole	7	16	23
Stephens	0	10	10
Tillman	0	1	1
Tulsa	0	13	13
Washita	0	3	3
Total April	109	399	508
Total March	111	421	532
Difference	2	22	24

East Central Texas Fields

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Anderson	3	153	0	1
Gregg	124	8,099	0	0
Kaufman	1	0	1	0
Rusk	88	5,015	1	0
Smith	15	594	2	0
Upshur	19	1,032	1	0
Van Zandt	3	176	1	0
Total April	253	15,069	6	1
Total March	252	15,412	7	2
Difference	1	343	1	1

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drg.	Ttl.
Anderson	6	1	1	8
Angelina	0	1	0	1
Bowie	1	0	0	1
Cherokee	4	0	0	4
Ellis	0	1	0	1
Fannin	0	0	1	1
Franklin	0	1	0	1
Freestone	0	1	1	2
Gregg	32	10	110	152
Henderson	3	1	3	7
Hunt	0	0	1	1
Kaufman	1	0	0	1
Lamar	0	1	0	1
Leon	1	0	1	2
Limestone	0	2	0	2
Nacogdoches	0	0	2	2
Navarro	2	0	0	2
Rains	0	1	0	1
Rusk	30	13	107	150
Smith	5	4	9	18
Upshur	4	6	13	23
Van Zandt	4	5	4	13
Wood	1	1	0	2
Total April	94	49	253	396
Total March	86	49	261	396
Difference	8	0	8	0

North Texas

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Archer	103	14,610	25	0
Brown	5	0	4	1
Clay	2	0	2	0
Cooke	1	35	0	0
Callahan	1	7	0	0
Eastland	1	0	1	0
Jack	3	0	3	0
Montague	1	0	1	0
Palo Pinto	2	15	0	1
Parker	1	0	1	0
Shackelford	14	263	6	0
Stephens	1	10	0	0
Wichita	11	530	6	0
Wilbarger	3	280	0	0
Young	26	462	14	0
Total April	175	16,212	63	2
Total March	140	10,312	45	0
Difference	35	5,900	18	2

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drg.	Ttl.
Archer	25	12	76	113
Baylor	0	1	0	1
Brown	3	4	5	12
Callahan	3	2	4	9
Clay	0	2	0	2
Coleman	4	2	4	10
Eastland	1	0	3	4
Foard	0	0	1	1
Grayson	0	3	0	3
Jack	3	1	5	9
Johnson	0	3	0	3
Montague	2	3	3	8
Palo Pinto	2	1	3	6
Parker	0	1	0	1
Shackelford	7	3	11	21
Stephens	2	1	0	3
Taylor	0	2	0	2
Throckmorton	0	0	1	1
Wichita	4	3	11	18
Wilbarger	3	4	10	17
Wise	0	0	1	1
Young	5	2	15	22
Total April	64	50	153	267
Total March	70	55	182	307
Difference	6	5	29	40

West Texas Fields

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Ector	3	1,894	0	0
Glasscock	3	2,892	0	0
Howard	2	20	1	0
Loving	1	166	0	0
Pecos	3	80,730	0	0
Sterling	1	0	1	0
Upton	1	104	0	0
Ward	9	1,684	1	1
Winkler	3	625	0	0
Total April	25	88,115	3	1
Total March	29	164,671	9	1
Difference	4	76,556	6	1

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drg.	Ttl.
Andrews	0	1	2	3
Brewster	0	0	1	1
Coke	0	1	0	1
Crane	0	0	3	3
Culberson	0	1	0	1
Dawson	0	1	0	1
Ector	7	2	13	22
Fisher	1	2	10	13
Glasscock	6	0	1	7
Howard	6	2	6	14
Irion	1	1	0	2
Jones	3	1	5	9
Loving	4	2	5	11
Pecos	8	4	7	19
Reagan	0	0	1	1
Reeves	2	0	1	3
Runnels	4	4	5	13
Schleicher	0	1	0	1
Scurry	0	4	0	4
Terrell	0	1	0	1
Upton	2	1	5	8
Val Verde	1	0	0	1
Ward	11	6	17	34
Winkler	5	2	8	15
Total April	61	37	90	188
Total March	45	38	94	177
Difference	16	1	4	9

Panhandle Fields

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Collingsworth	1	0	1	0
Gray	15	3,459	2	1
Hutchinson	5	825	0	0
Wheeler	3	1,595	0	1
Total April	24	5,883	3	2
Total March	15	5,744	1	3
Difference	9	139	2	1

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drg.	Ttl.
Carson	5	2	3	10
Childress	1	0	1	2
Dallam	0	0	1	1
Gray	20	8	46	74
Hemphill	0	1	0	1
Hutchinson	4	4	8	16
Moore	2	0	2	4
Roberts	0	1	0	1
Wheeler	7	5	18	30
Miscellaneous counties	0	4	0	4
Total April	39	25	79	142
Total March	32	21	61	114
Difference	7	4	18	29

Southwest Texas Fields

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Agua Dulce	0	0	0	0	0	2	2
Byersville Pool	0	0	0	0	0	1	1
Cedar Creek Pool	1	0	1	0	0	1	1
Cuevitas Pool	2	0	2	0	0	2	2
Eagle Hill Pool	3	33	2	0	0	2	2
East Cole Pool	1	0	1	0	0	0	0
Eckert Pool	0	0	0	0	0	3	3
Escobas Pool	2	60	1	0	0	0	0
Govt. Wells	35	13,455	1	1	2	10	12
Jacob Pool	2	90	1	0	0	5	5
Jennings	1	20	0	0	0	2	2
Kingsville Pool	0	0	0	0	0	1	1
Kohler	1	0	0	1	0	1	1
Laurel	1	0	1	0	0	0	0
Martinez Pool	1	0	0	1	0	0	0
Mirando Valley Pool	1	0	1	0	0	0	0
North Dale	4	83	2	0	0	1	1
North Pettus	0	0	0	0	0	1	1
Sarnosa Pool	2	147	0	0	0	0	0
Saxet Pool	1	150	0	0	0	1	1
Slick Pool	1	0	1	0	0	0	0
Miscellaneous	40	213	30	6	20	100	120
Total Apr.	99	14,251	44	9	22	133	155
Total Mar.	94	20,846	37	4	31	124	155
Difference	5	6,595	7	5	9	9	0

Gulf Coast Fields

TEXAS

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Arriola	0	0	0	0	0	2	2
Barbers Hill	4	2,958	0	0	1	19	20

Batson	0	0	0	0	0	1	1
Big Creek	1	0	1	0	0	1	1
Buckeye	0	0	0	0	1	2	3
Clay Creek	0	0	0	0	0	2	2
Cleveland	0	0	0	0	0	2	2
Coletto Creek	0	0	0	0	0	1	1
Conroe	16	20,856	1	0	1	12	13
Damon Mound	1	100	0	0	0	0	0
Esperson	2	121	0	0	0	1	1
Goose Creek	1	650	0	0	3	6	9
Greta	6	2,092	1	0	3	20	23
Hankamer	1	0	1	0	0	0	0
High Island	2	1,170	0	0	0	5	5
Hull	9	5,047	0	0	1	8	9
Humble	0	0	0	0	0	2	2
Libery	0	0	0	0	0	1	1
Livingston	2	836	1	0	0	5	5
Louise	0	0	0	0	0	4	4
Manvell	4	860	3	0	2	6	8
McFaddin district	1	0	0	1	0	3	3
Mykawa	2	550	0	0	0	0	0
O'Connor	1	35	0	0	0	1	1
Orchard	0	0	0	0	0	1	1
Pierce Jct.	1	0	0	1	0	3	3
Pledger	0	0	0	0	0	3	3
Port Neches	0	0	0	0	0	2	2
Raccoon Bend	0	0	0	0	0	1	1
Saratoga	2	68	0	0	0	2	2
Sour Lake	0	0	0	0	0	1	1
Stratton Ridge	0	0	0	0	0	1	1
Sugar Land	0	0	0	0	0	1	1
Thompson	1	0	1	0	1	3	4
Tomball	5	825	0	2	3	11	14
West Columbia	0	0	0	0	0	1	1
Miscellaneous	8	0	8	0	15	45	60
Total Apr...	72	36,168	17	4	31	179	210
Total Mar...	111	56,827	30	4	42	158	200
Difference..	39	20,659	13	0	11	21	10

LOUISIANA COAST

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Bay St. Elaine	1	30	0	0	1	0	1
Black Bayou	0	0	0	0	1	1	2
Caillou Island	1	2,070	0	0	0	1	1
Cameron Meadows	0	0	0	0	2	4	6
Choctaw	1	950	0	0	0	0	0
Darrow	1	50	0	0	0	0	0
Edgerly	2	200	1	0	0	2	2
Garden Island	0	0	0	0	0	1	1
Gueydan	0	0	0	0	0	1	1
Hackberry	2	520	0	0	0	9	9
Iowa	4	3,804	1	0	1	6	7
Jennings	0	0	0	0	0	2	2
Lake Barre	0	0	0	0	1	3	4
Lake Pelto	0	0	0	0	0	1	1
Leesville	8	6,858	0	0	2	5	7
Lockport	1	500	0	0	0	4	4
Port Barre	2	1,119	0	0	2	0	2
Sorrento	2	0	2	0	0	0	0
Starks	1	0	1	0	0	1	1
Sulphur	2	1,000	0	0	0	5	5
Sweet Lake	0	0	0	0	0	2	2
Vinton	6	896	1	0	0	3	3
White Castle	0	0	0	0	0	1	1
Miscellaneous	2	0	2	0	4	19	23
Total Apr...	36	17,997	8	0	14	71	85
Total Mar...	23	6,697	12	0	8	78	86
Difference..	13	11,300	4	0	6	7	1

Total Gulf Coast

April	108	54,165	25	4	45	250	295
March	134	63,524	42	4	50	236	286
Difference..	26	9,359	17	0	5	14	9

Louisiana Fields

Summary of Field Operations

	Comp.	I.P.	Dry	Gas*	Rigs	Drg.	Ttl.
Avoyelles	0	0	0	0	0	1	1
Bienville	0	0	0	0	2	1	3
Bossier	2	0	2	0	4	6	10
Caddo	2	10	1	0	2	11	13
Caldwell	0	0	0	0	0	2	2
Catahoula	0	0	0	0	1	0	1
Claiborne	0	0	0	0	1	0	1
Concordia	0	0	0	0	0	1	1
DeSoto	3	0	3	0	3	11	14
East Carroll	0	0	0	0	1	0	1
Franklin	0	0	0	0	1	0	1
Grant	0	0	0	0	0	2	2
Lincoln	0	0	0	0	0	1	1
Morehouse	0	0	0	0	0	2	2
Natchitoches	0	0	0	0	3	3	6
Ouachita	2	0	1	1	5	1	6
Rapides	0	0	0	0	4	3	7
Red River	0	0	0	0	2	2	4
Richland	1	0	0	1	1	0	1
Sabine	14	840	4	0	30	44	74
Union	0	0	0	0	0	2	2
Vernon	0	0	0	0	1	0	1
Webster	0	0	0	0	1	1	2
Total Apr.	24	850	11	2	62	94	156
Total Mar.	39	3,091	19	2	61	83	144
Difference	15	2,241	8	0	1	11	12

*Gas production: Ouachita, 1,750,000; Richland, 41,500,000; total, 43,250,000 feet.

Arkansas Fields

Summary of Field Operations

	Comp.	I.P.	Dry	Gas	Rigs	Drg.	Ttl.
Arkansas	0	0	0	0	0	1	1
Ashley	1	0	1	0	0	0	0
Columbia	1	0	1	0	0	0	0
Conway	0	0	0	0	0	1	1
Hempstead	0	0	0	0	1	1	2
Jefferson	0	0	0	0	1	1	2
Lafayette	0	0	0	0	1	2	3
Little River	0	0	0	0	0	2	2
Lonoke	0	0	0	0	0	1	1
Miller	1	0	1	0	3	7	10
Nevada	0	0	0	0	0	1	1
Ouachita	1	0	1	0	1	2	3
Poinsett	0	0	0	0	0	1	1
St. Francis	0	0	0	0	1	0	1
Union	1	100	0	0	2	7	9
Yell	0	0	0	0	0	1	1
Total Apr.	5	100	4	0	10	28	38
Total Mar.	3	50	2	0	9	30	39
Difference	2	50	2	0	1	2	1

East Texas Border Counties

Summary of Field Operations

	Comp.	I.P.	Dry	Gas*	Rigs	Drg.	Ttl.
Cass	0	0	0	0	1	1	2
Harrison	0	0	0	0	0	2	2
Marion	0	0	0	0	0	2	2
Panola	3	0	2	1	1	3	4
Shelby	0	0	0	0	1	3	4
Total Apr.	3	0	2	1	3	11	14
Total Mar.	2	0	1	1	4	13	17
Difference	1	0	1	0	1	2	3

*Gas production: Panola, 500,000 ft.

Mississippi Fields

Summary of Field Operations

	Comp.	I.P.	Dry	Gas*	Rigs	Drg.	Ttl.
Franklin	0	0	0	0	1	0	1
Greene	0	0	0	0	0	1	1
Hinds	1	0	0	1	2	2	4
Lamar	0	0	0	0	1	0	1
Madison	0	0	0	0	0	1	1
Marion	1	0	1	0	0	0	0
Pike	0	0	0	0	0	1	1
Rankin	2	0	1	1	1	3	4
Scott	0	0	0	0	0	1	1
Simpson	0	0	0	0	0	1	1
Walthall	0	0	0	0	1	0	1
Warren	0	0	0	0	0	1	1
Wilkinson	0	0	0	0	0	1	1
Total Apr.	4	0	2	2	6	12	18
Total Mar.	1	0	1	0	7	15	22
Difference	3	0	1	2	1	3	4

*Gas production: Hinds, 50,000,000; Rankin, 40,000,000; total, 90,000,000 feet.

Alabama Fields

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Baldwin	0	0	0	0	0	1	1
Lamar	0	0	0	0	0	1	1
Total Apr.	0	0	0	0	0	2	2
Total Mar.	0	0	0	0	0	2	2
Difference	0	0	0	0	0	0	0

Rocky Mountain Area

NEW MEXICO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Eddy	2	205	0	0	1	10	11
Lea	2	13,123	0	0	5	9	14
McKinley	0	0	0	0	1	5	6
San Juan	2	0	1	1	3	14	17
San Miguel	0	0	0	0	0	3	3
Santa Fe	0	0	0	0	0	3	3
Valencia	0	0	0	0	0	3	3
Miscellaneous	0	0	0	0	2	8	10
Total Apr.	6	13,328	1	1	12	55	67
Total Mar.	6	3,180	0	2	10	58	68
Difference	0	10,148	1	1	2	3	1

MONTANA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Carbon	2	0	2	0	1	3	4
Fergus	0	0	0	0	0	3	3
Gallatin	1	0	1	0	0	1	1
Glacier	7	620	0	0	7	17	24
Liberty	0	0	0	0	0	3	3
Petroleum	1	1	0	1	0	2	2
Teton	1	0	1	0	0	2	2
Toole	2	10	1	0	1	6	7
Miscellaneous	0	0	0	0	2	5	7
Total Apr.	14	630	6	0	11	42	53
Total Mar.	9	832	1	0	9	47	56
Difference	5	202	5	0	2	5	3

UTAH

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Total April	0	0	0	0	1	14	15
Total March	0	0	0	0	1	14	15
Difference	0	0	0	0	0	0	0

WYOMING

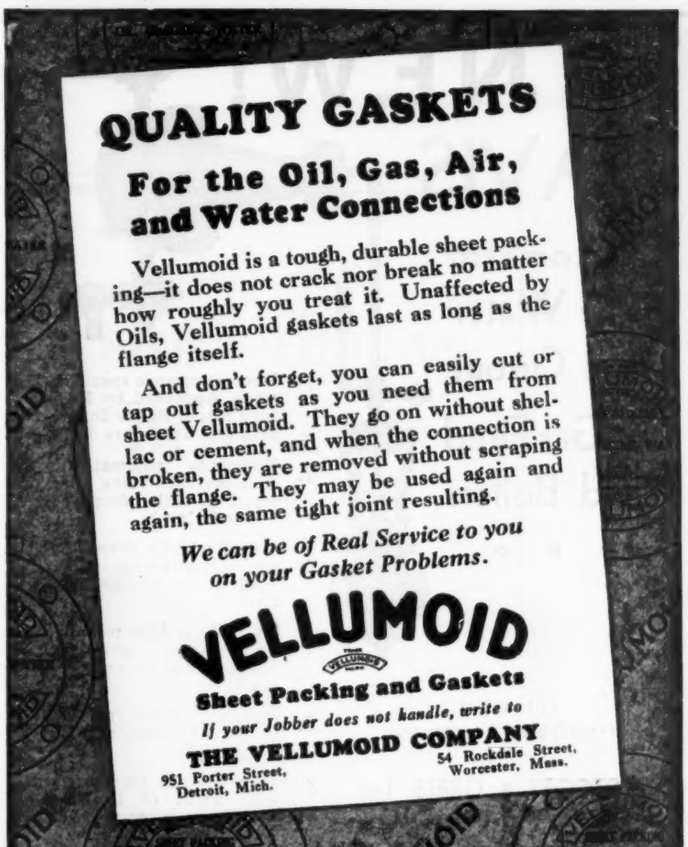
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Big Horn	0	0	0	0	1	6	7
Carbon	1	0	0	1	2	5	7
Converse	1	0	1	0	0	5	5
Crook	0	0	0	0	0	7	7
Fremont	0	0	0	0	1	3	4
Hot Springs	1	0	0	1	0	2	2
Natrona	0	0	0	0	3	6	9
Niobrara	0	0	0	0	0	2	2
Park	0	0	0	0	0	3	3
Sweetwater	0	0	0	0	0	4	4
Sublet	0	0	0	0	4	4	4
Uinta	0	0	0	0	0	6	6
Washakie	0	0	0	0	2	2	4
Weston	0	0	0	0	4	8	12
Miscellaneous	0	0	0	0	0	8	8
Total Apr.	3	0	1	2	13	71	84
Total Mar.	3	140	0	1	12	65	77
Difference	0	140	1	1	1	6	7

COLORADO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Boulder	0	0	0	0	0	3	3
Elbert	0	0	0	0	0	3	3
Jackson	0	0	0	0	0	5	5
Larimer	1	0	1	0	0	4	4
Las Animas	0	0	0	0	0	2	2
Moffat	0	0	0	0	0	2	2
Morgan	0	0	0	0	1	1	2
Weld	0	0	0	0	0	3	3
Miscellaneous	0	0	0	0	2	22	24
Total Apr.	1	0	1	0	3	45	48
Total Mar.	1	0	1	0	1	45	46
Difference	0	0	0	0	2	0	2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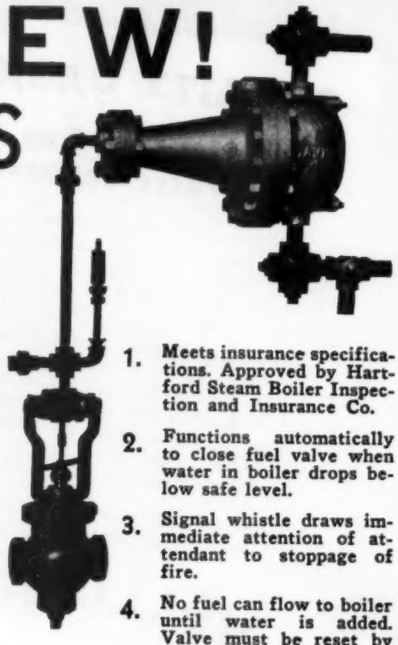
DAVIS
Automatic Low Water Fuel Cutout for Gas Fired Field Boilers



1. Meets insurance specifications. Approved by Hartford Steam Boiler Inspection and Insurance Co.
2. Functions automatically to close fuel valve when water in boiler drops below safe level.
3. Signal whistle draws immediate attention of attendant to stoppage of fire.
4. No fuel can flow to boiler until water is added. Valve must be reset by hand.
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6. Low cost in comparison with value of life and equipment protected.

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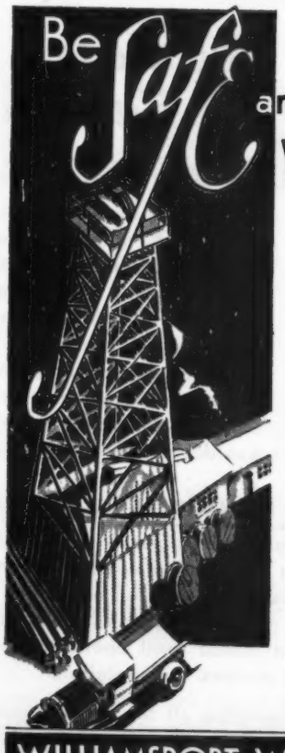

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Mid-Continent Supply Co., Distributors in Texas, Louisiana and Arkansas.

Eastern Fields

Summary of Completed Work

Field—	Comp.	Prod.	Dry	Gas
Bradford	120	183	0	0
Allegany	2	6	0	0
Venango-Clarion	3	7	0	0
Butler-Armstrong	0	0	0	0
Southwest Penn.	6	4	2	3
Southeast Ohio	15	351	2	0
West Virginia	24	82	6	11
Total April	170	633	10	14
Total March	162	845	9	21
Difference	8	212	1	7

Summary of Work Under Way

Bradford	16	71	87
Allegany	0	1	1
Venango-Clarion	3	3	6
Butler-Armstrong	3	4	7
Southwest Pennsylvania	5	13	18
Southeast Ohio	12	24	36
West Virginia	31	57	88
Total April	70	173	243
Total March	72	165	237
Difference	2	8	6

Michigan Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Midland	19	14,037	2	0	26	70	96
Isabella	6	178	2	1	22	22	44
Lake	0	0	0	0	0	2	2
Iosco	0	0	0	0	1	0	1
Gratiot	0	0	0	0	2	1	3
Clare	0	0	0	0	4	1	5
St. Clair	0	0	0	0	2	0	2
Cass	0	0	0	0	3	1	4
Kent	0	0	0	0	1	2	3
Emmett	0	0	0	0	1	1	2
Montmorency	0	0	0	0	3	0	3
Sanilac	0	0	0	0	3	0	3
Saginaw	0	0	0	0	4	2	6
Newyago	0	0	0	0	0	2	2
Shiawassee	0	0	0	0	1	3	4
Allegan	0	0	0	0	1	3	4
Livingston	0	0	0	0	1	2	3
Alpena	0	0	0	0	1	0	1
Cheboygan	0	0	0	0	0	1	1
Oakland	0	0	0	0	0	1	1
Macomb	0	0	0	0	1	1	2
Gennessee	0	0	0	0	2	0	2
Monroe	0	0	0	0	0	1	1
Mecosta	1	0	1	0	4	0	4
Montcalm	0	0	0	0	2	2	4
Muskegon	0	0	0	0	6	6	12
Ogemaw	3	220	0	0	7	11	18
Gladwin	0	0	0	0	0	1	1
Iona	0	0	0	0	0	1	1
Eaton	0	0	0	0	0	1	1
Lapeer	1	0	1	0	0	0	0
Hillsdale	0	0	0	0	1	0	1
Total Apr.	30	14,435	7	1	99	138	237
Total Mar.	38	12,745	11	4	92	142	234
Difference	8	1,690	4	3	7	4	3

Lima Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wood	0	0	0	0	0	2	2
Hancock	0	0	0	0	0	1	1
Allen	0	0	0	0	1	1	2
Auglaize	0	0	0	0	0	2	2
Van Wert	4	17	2	0	0	0	0
Mercer	0	0	0	0	0	1	1
Shelby	0	0	0	0	0	1	1
Sandusky	0	0	0	0	0	4	4
Ottawa	0	0	0	0	0	1	1
Seneca	1	0	1	0	0	4	4
Lucas	0	0	0	0	0	1	1
Wyandot	5	43	3	0	1	6	7
Hardin	1	0	0	1	0	0	0
Total Apr.	11	60	6	1	2	24	26
Total Mar.	4	160	1	0	4	26	30
Difference	7	100	5	1	2	2	4

Indiana Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Gibson	1	5	0	0	1	4	5
Sullivan	0	0	0	0	0	4	4
Pike	1	7	0	0	0	2	2
Daviess	0	0	0	0	0	2	2
Randolph	1	0	0	1	0	0	0
Warrick	0	0	0	0	0	2	2
Spencer	0	0	0	0	0	3	3
Greene	0	0	0	0	0	1	1
St. Joe	0	0	0	0	0	1	1
Harrison	1	0	0	1	0	1	1
Porter	0	0	0	0	0	1	1
Stark	0	0	0	0	0	1	1
Henry	0	0	0	0	0	1	1
Knox	1	0	1	0	0	2	2
Martin	0	0	0	0	0	1	1
Shelby	0	0	0	0	0	1	1
Hancock	0	0	0	0	0	1	1
Lawrence	0	0	0	0	0	1	1
Vanderburg	2	0	2	0	0	8	8
Monroe	0	0	0	0	0	1	1
Perry	3	3	2	0	0	1	1
Total Apr.	10	15	5	2	1	39	40
Total Mar.	9	40	5	1	0	32	32
Difference	1	25	0	1	1	7	8

Kentucky Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Ohio	2	25	1	0	0	18	18
Daviess	0	0	0	0	0	16	16
Hancock	0	0	0	0	0	2	2
Henderson	1	5	0	0	0	0	0
McLean	3	555	0	0	0	5	5
Muhlenberg	1	0	1	0	0	3	3
Allen	1	1	0	0	0	1	1
Total Apr.	8	586	2	0	0	45	45
Total Mar.	17	634	7	0	0	53	53
Difference	9	48	5	0	0	8	8

Central Ohio Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Ashland	1	3	0	0	2	2	4
Huron	0	0	0	0	0	1	1
Medina	3	22	0	1	4	1	5
Lorain	0	0	0	0	2	7	9
Holmes	0	0	0	0	0	3	3
Richland	0	0	0	0	0	1	1
Wayne	0	0	0	0	2	3	5
Summitt	0	0	0	0	1	1	2
Fairfield	1	0	0	1	2	0	2
Knox	0	0	0	0	1	4	5
Coshocton	3	267	0	0	4	2	6
Licking	5	20	2	1	2	4	6
Muskingum	1	0	1	0	1	9	10
Athens	2	0	1	1	2	12	14
Tuscarawas	0	0	0	0	3	1	4
Stark	6	0	2	4	4	21	25
Belmont	0	0	0	0	0	5	5
Guernsey	5	3	0	4	1	13	14
Crawford	0	0	0	0	0	1	1
Gallia	0	0	0	0	0	4	4
Scioto	0	0	0	0	0	1	1
Pike	0	0	0	0	0	2	2
Carroll	0	0	0	0	0	3	3
Vinton	1	0	0	1	1	1	2
Lawrence	0	0	0	0	1	4	5
Geauga	0	0	0	0	0	1	1
Meigs	0	0	0	0	0	7	7
Total Apr.	28	315	6	13	33	114	147
Total Mar.	44	284	11	21	27	109	136
Difference	16	31	5	8	6	5	11

Illinois Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Clark	1	7	0	0	0	2	2
Crawford	1	0	0	1	1	1	2
Marion	0	0	0	0	0	1	1
Boone	0	0	0	0	1	0	1
Jefferson	0	0	0	0	0	1	1
Clinton	0	0	0	0	0	1	1
Bond	0	0	0	0	0	2	2
Madison	0	0	0	0	0	1	1
Macoupin	0	0	0	0	0	1	1
Jasper	0	0	0	0	0	1	1
Total Apr.	2	7	0	1	2	11	13
Total Mar.	2	15	1	0	2	11	13
Difference	0	8	1	1	0	0	0

PRODUCTION IN RUSSIA

Crude oil production in Russia for April totaled 2,011,700 tons. Based on daily average production, the April figure is approximately the same as in March and 20 per cent greater than in April, 1933. March production totaled 2,092,000 tons, February, 1,784,000 tons and January, 1,910,000 tons.

The following table based on average daily production in barrels gives a comparison of the operations the first four months of this year and the same period of 1933:

AVERAGE DAILY PRODUCTION

	Barrels daily— 1934	1933
January	432,000	335,000
February	446,000	363,000
March	472,000	355,000
April	469,396	394,000
Average	454,949	361,750

This table shows that the production of Russia has exceeded the corresponding month of last year during each of the first four months of this year with a total increase of approximately 25 per cent.

Crude oil runs to stills have shown a smaller increase although there was a large gain in April over March. Crude runs to stills in April totaled 1,805,300 tons which compares with 1,751,000 tons in March, 1,517,000 tons in February and 1,666,300 tons in January. Crude runs to stills the first four months of this year averaged daily (data in barrels): January, 376,200; February, 379,200; March, 395,000 and April 421,233.

Drilling in April totaled 107,064 meters which is practically the same as the 109,120-meter total for March. February drilling totaled 97,427 meters and January, 96,760 meters.

FRANK M. SPURR DIES

PETROLIA, Ontario, June 2.—Frank M. Spurr died here recently in his seventy-first year, following a paralytic stroke. Coming to Petrolia as a young man, Mr. Spurr was connected with the firm of H. Mackenzie & Sons and later with the Oil Well Supply Co.

EDWARD M. HEWLETT DEAD

Edward M. Hewlett, 68, veteran engineer of the General Electric Co., who retired from active service in 1931, died at his home in Schenectady, N. Y., on May 24.

First Chapter in a story that is stranger than fiction

IN the early 1930's, the United States Patent Office issued a series of patents to the Gulf Refining Company—and a new chapter in the history of lubricating oils began.

For these patents made possible an utterly new process for refining oils—the Alchlor process. And from this process came an oil which dwarfed the fondest dreams of lubrication engineers—Gulfpride.

The record of Gulfpride's performance is so phenomenal that it reads like a page from fiction. It has lubricated automobile motors for 40,000 miles and left no trace of carbon. It has increased the mileage a car can go before an additional quart of oil must be added—as much as 14 times. It has aided in establishing a dozen world's records.

If buyers of lubricants raised their specifications to the Gulfpride standard, no other oil in the world could meet them. For Gulfpride far exceeds every known set of specifications ever issued for lubricating oil—including the U. S. Army and Navy.

Yet this phenomenal oil has a deeper significance than the super-lubrication it brings to an engine or machine. For it is striking evidence of the skill, ingenuity, and perseverance of the Company that developed it—qualities that extend to every lubricant Gulf makes—whether it be used in a motor car, in a factory, on sea or in the air.

GULF REFINING COMPANY

MacClatchie-GRAMS

Remarkable Facts

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MacClatchie Mfg., Co.

COMPTON, CALIF.

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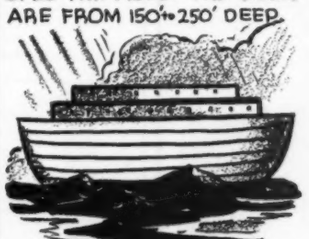
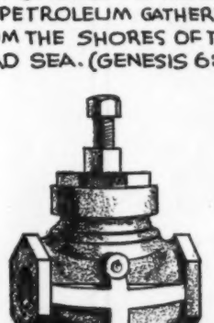


NOAH'S ARK WAS CAULKED WITH BITUMEN-A FORM OF PETROLEUM GATHERED FROM THE SHORES OF THE DEAD SEA. (GENESIS 6:14)



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MacClatchie Manufacturing Co.

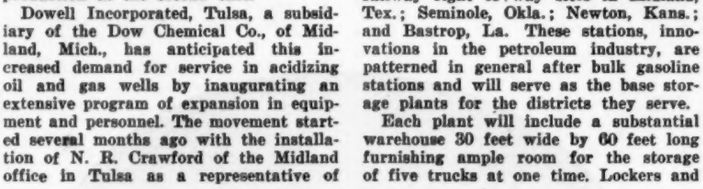
Compton, California

Dowell Incorporated Increasing Its Field Service for Acid Treatment of Wells

By L. G. E. BIGNELL
Petroleum Engineering Editor

James A. Moffett, vice president of the Standard Oil Co. of California, upon his return from a business trip to Europe is reported as stating that the consumption of oil in the United States should reach 3,000,000 bbls. daily this summer. This means an increase of approximately 640,000 bbls. over the present estimated consumer's daily demand and more than 435,000 bbls. over the reported production for the week ending May 19. These increases would represent 27 and 17 per cent additional output of oil, respectively, based upon the increase over customer's estimated demand in the first instance and increase over May 19 production in the second case.

Dowell Incorporated, Tulsa, a subsidiary of the Dow Chemical Co., of Midland, Mich., has anticipated this increased demand for service in acidizing oil and gas wells by inaugurating an extensive program of expansion in equipment and personnel. The movement started several months ago with the installation of N. R. Crawford of the Midland office in Tulsa as a representative of the board of directors to survey the possibilities of increased demand for Dowell service in the Mid-Continent Field. His investigaton and recommendatons were accepted and he has returned to Tulsa to supervise the expansion program. J. A. Cummin has recently been made branch manager in charge of all Mid-Continent activities, and R. D. Shaw continues as branch sales manager.



Type of equipment used in treating oil wells with acid

New Branches and Stations

A new district office of Dowell, Inc., has been installed at 905 Petroleum Building, Midland, Tex., with John G. Staudt in charge and his staff augmented by the addition of two treating engineers, C. M. Maness, of Tulsa, a graduate mining engineer with 15 years service in the Mid-Continent area as geologist and petroleum engineer, and Ward Tennis, of Joplin, Mo., a graduate geologist, with a wide experience in field geology and drilling.

A new treating station has been established in Wichita Falls, Tex., with temporary headquarters in the Holt Hotel. Ralph R. Anderson, of Wichita Falls, formerly associated with M. M. Garret, consulting geologist, and Joe L. Sherk, an experienced treating engineer, transferred from the Dowell organization in Kansas, are in charge and arrangements have been made for the installation of warehouse and storage tanks upon railroad right of way.

Two new automobile tank trucks and pump units are being added at the Wichita Falls station.

In addition to these additions in Texas a sales office has been opened in Fort Worth, Tex., with L. R. Austin in charge. The office is in the Fort Worth Club Building.

To handle increased business in the Seminole, Okla., district, four new truck units have been added to the equipment stationed there. At the Midland, Tex., station four additional units have been installed to take care of the increased business of the Permian Basin.

For the gas fields of Louisiana an additional unit consisting of a heavy compressor mounted on truck and two lighter acid tank trucks are to be installed. The treating staffs now stationed in Bastrop and Many, La., are being augmented by the addition of William J. Russell, well known in the Mid-Continent oil and gas fields.

Two heavy A-6 International pump and tank trucks have been added to the equipment in Newton, Kans.

To Install Bulk Stations

To take care of the increasing volume of business Dowell, Inc., is preparing to install bulk acid service stations upon railway right of way sites in Midland, Tex.; Seminole, Okla.; Newton, Kans.; and Bastrop, La. These stations, innovations in the petroleum industry, are patterned in general after bulk gasoline stations and will serve as the base storage plants for the districts they serve.

Each plant will include a substantial warehouse 30 feet wide by 60 feet long furnishing ample room for the storage of five trucks at one time. Lockers and work benches are provided along one wall of the warehouse, an office in one corner and elevated platform across one end from which the trucks will be loaded with the dry chemicals used.

The plant will be served by a spur track that will permit the delivery of the special inhibited acid.

Horizontal storage tanks will be mounted upon substantial piers at each end of the warehouse and the acid and other fluids will be pumped direct from the tank car into these tanks. The delivery of acid to the auxiliary stations in each district will be made by truck and sufficient fresh material will be carried at each service station to accommodate the volume of business. There will be two such tanks at each treating station, each of 10,000-gallon capacity.

If there is an unusual demand for service in any particular oil field the Dowell organization will distribute men and equipment to the various points to care for the business. The Tulsa office will serve as western headquarters for this company, in direct communication with the Midland, Mich., headquarters by teletype service. This service is also being installed in all Mid-Continent district offices to keep the field men in touch with the officials in Tulsa.

Back of Dowell service is the Dow Chemical Co. organization with its trained corps of more than 300 chemists and its fully equipped laboratories. These will soon be augmented by a laboratory to be established in Tulsa with complete facilities for carrying on experimental and research work in the Mid-Continent Field. This investment of capital and the building up of an extensive organization of trained chemists and production men will provide a thoroughly complete and efficient service for the producing companies. Such an expansion indicates faith in the future of the oil industry, promises development of technique in treating types of oil-producing formations that do not at present respond to acidization and deserves the support of all oil companies interested in the future of oil production.

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Accurate, quick and inexpensive, the SYFO Clinograph furnishes daily records of deviation in drilling . . . obtained *without the use of dangerous* acids. SYFO records are direct records, accurate records — permanent records on paper that can be filed away for reference. Let SYFO "set you straight" . . . and *keep* you straight.

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BRADFORD, PA.
Hooker Fulton Building

Sectional view of a SYFO Clinograph

SYFO CLINOGRAPH

Important Wells in Rice, Rooks, McPherson and Russell, Kansas, Areas Closely Watched

By JAMES McINTYRE

The several interesting near completions in Kansas reported in the late field news from that State in The Oil and Gas Journal last week had not been completed up to the writing of this review. The Continental Oil Co.'s No. 1 Graber, NE NE NW Section 32-21-1w, in McPherson County, which has production in the Hunton lime at 3,279-93 feet was swabbing from 31 to 67 bbls. per hour. The White Eagle Oil Co. was laying a 4-inch pipe line to the well and tanks were being set. The status of the Continental Oil Co., Empire Oil & Refining Co. and Shell Petroleum Corp.'s No. 1 Lansing, in Section 25-18-8w, in Rice County; Phillips Petroleum Co.'s No. 1 Dopita, C SW SW Section 21-8-17w, Rooks County; Palmer, Dickey and others' No. 1 Nordling, SE SE SW Section 19-18-2w, McPherson County; Revere Development Co.'s No. 1 Heinz, NE SW SE Section 8-18-10w, Rice County, and Tom Palmer's No. 1 Borrell, NE cor. SE Section 21-15-14w, Russell County, had not changed materially and they are being watched with much interest.

Aside from the wells mentioned the reports from the various producing counties in the State were of a routine character.

Kansas Production

Estimated daily production of important pools in Kansas for the week ending June 2 and for the preceding week was as follows:

Pool—	Barrels— June 2	May 26
Hollow	14,945	10,750
Ritz-Canton	13,545	14,400
Voshell	6,895	8,965
Johnson	2,090	2,273
Sedgwick County	5,010	5,150
Nikkell	5,350	5,435
Ellsworth County	2,665	4,063
Barton County	971	1,519
Rice County	10,978	11,532
Reno County	4,729	5,403
Ellis County	550	454
Kingman County	3,085	1,965
Stafford County	1,002	1,021
Russell County	6,220	6,150
Greenwood County	12,050	12,250
Butler County	18,100	17,500
Other pools	20,940	21,070
Total	132,125	132,900

E. B. Shawver's No. 1 Brooking, SW cor. Section 16-28-1e, Sedgwick County, found chat at 3,062 feet, and oil and gas shows at 3,076 and 3,085-93 feet, total depth 3,099 feet. The well sprayed 8 bbls. of oil per hour with 2,750,000 feet of gas per day.

Aylward & Corn had location made for No. 1 Heck, NW cor. SW Section 2-27-1w.

Connell and others have rig up for No. 2 Cross, NE SE NE Section 27-25-1w.

Butler County

Empire Oil & Refining Co.'s No. 73 Paulsen, SE SW SE Section 2-26-4, Towanda Pool, Butler County, was acidized in Kansas City lime at 1,644-84 feet and pumped 112 bbls. of oil and 109 bbls. of water in 24 hours.

Tom Palmer and Derby Oil Co.'s No. 1 Harder, NW SE NW Section 27-24-3, was a hole full of water from limestone at 3,204-64 feet and was abandoned.

Vickers Petroleum Co.'s No. 1-A Moore, C W half NW SW Section 36-24-3, pumped 415 bbls. of oil and 40 bbls. of water from Mississippi lime at 2,706-15 feet, which had been acidized.

Greenwood County

Bisagno and others have machine in for No. 2 Steckel, NW NE NW Section 6-25-13, Greenwood County.

Skelly Oil Co.'s No. 20 Wick, SW SE SW Section 27-22-11, an old well deepened from 1,962 to 1,988 feet, was shot, and later pumped 40 bbls. of oil and 15 bbls. of water.

Burnett, Ables and others were drilling at 1,800 feet in No. 4 Mathewson, C E half NW NW Section 31-22-10.

Reno County

Olson Drilling Co. and Shell Petroleum Corp. have rig up for No. 5 Roberts, C SE SW Section 25-23-4w, Reno County.

Harvey County

Hollow and others completed No. 1 Schmidt, SW SE NW Section 17-22-3w, Hollow Pool, was deepened from 3,437 feet to 3,493 feet. It pumped at the rate of about 1,400 bbls. per day. Same operators completed No. 5 Schmidt, NE SE NW Section 17-22-3w, which had Hunton lime at 3,482-3,505 feet, which, when acidized, yielded a production of 360 bbls. in a 24-hour potential test.

Sinclair Prairie Oil Co.'s No. 4 Neufeldt-A, SW SE SE Section 18-22-3w, was completed. It flowed 295 bbls. in 24 hours from Hunton lime at 3,414-45 feet, which had been acidized.

Morshead and others set 12-inch pipe at 340 feet in No. 1 Township, 390 feet south and 30 feet east of NW cor. Section 20-22-3w.

McPherson County

Investors Mineral Development Co.'s No. 1 Kaufman, CWL NW NW Section 22-21-3w, Nikkell Pool, McPherson County, was swabbing 22 bbls. per hour from chat at 3,151-96 feet.

Wildcat Operations in Kansas

Week Ending June 2
(Descriptions are East unless marked otherwise)

BARTON COUNTY

Company, farm and location—
Atlantic O. P. Co.'s No. 1 Straub, C SE NW Sec. 36-18-11w ..... Rig.
Harris & Haun and J. Brook's No. 1 Dietz, NE SW Sec. 21-16-15w ..... Rig.
National Ref. Co.'s No. 1 Ingersoll, C NW NE Sec. 2-19-13w ..... T.D. 1,810 ft.; fishing.
Skelton et al's No. 1 Ott, C SE SE Sec. 14-19-14w ..... P.B. to 3,255 ft.; acidized; pumping wtr.
Walter Shearen et al's No. 1 Kempler, SE NE NE Sec. 31-18-11w ..... S.D. 250 ft.

BUTLER COUNTY

DeGenther et al's No. 1 Marnane, NW cor. Sec. 29-26-3.. Cellar.
L. C. Hay et al's No. 1-A Bolin, SE SW SE Sec. 36-26-6.. K.C. lime 2,159-62 ft.; 8 bbls. in 24 hrs.
Tom Palmer and Darby Pet. Co.'s No. 1 Harder, NW NE Sec. 27-24-3 ..... Dry and abnd. 3,264 ft.
Van Meter et al's No. 1 Moore, NE cor. Sec. 5-35-4 ..... Rig.

CLAY COUNTY

Seidel Bros.' No. 1 Youkers, C 8½ SE NW Sec. 21-9-4.. Spudded.

DICKINSON COUNTY

Dutch Oil Co.'s No. 1 Phillips, C NE NW Sec. 15-15-1e.. S.D. 1,335 ft.

ELLIS COUNTY

Alma Pet. Co. et al's No. 1 Rhodes estate, SW SW Sec. 14-11-23w ..... H.F.W. 3,620-24 ft.

ELK COUNTY

Diller O. & G. Co.'s No. 1-A Keys, C E½ SE NE Sec. 26-31-10 ..... Drlg. 1,300 ft.
Lerke et al's No. 1 Mason, C NE NE Sec. 5-31-10 ..... H.F.W. 1,564 ft.; S.D.
B. Taylor et al's No. 1 Wilson, SE NE SE Sec. 5-28-10 .. Machine.

FINNEY COUNTY

National Ref. Co. et al's No. 1 Smith, C SE SW Sec. 2-23-29w ..... T.D. 1,800 ft.; S.D. for orders.

GREENWOOD COUNTY

Ackman et al's No. 1-A Gilroy, SE SW NW Sec. 34-26-12. Dry and abnd. 2,015 ft.

HARPER COUNTY

R. G. Berry's No. 1 Anthony, C SW SW Sec. 17-31-9w .. Surface pipe set.

HARVEY COUNTY

Foraker et al's No. 1 Hiett, SE SW NE Sec. 34-24-4w.... Cellar.
Wenzel et al's No. 1 Schrag, NW SE Sec. 24-22-3w ..... Rig.
Lassen, Bruce et al's No. 1 Joseph, NW NE Sec. 13-24-2 ..... Spudded and S.D.

KINGMAN COUNTY

Kessler et al's No. 1 Bollinger, SW NW SW Sec. 12-28-5w ..... Drlg. 2,800 ft.
Stanolind-Amerada's No. 1 Holtje, NE SW Sec. 16-26-4w ..... Rig.

LYONS COUNTY

Arkman & Baker's No. 1-A Hind, NE NW Sec. 30-21-12.. Drlg. 1,075 ft.

McPHERSON COUNTY

Tom Palmer's No. 1 Nordling, SE SW Sec. 19-18-2w .... Hunton 3,040-50 ft.; 2,000 ft. of oil in hole.
Continental Oil Co. et al's No. 1 Graber, NE NW Sec. 32-21-1w ..... Hunton 3,274-93 ft.; 1,000 ft. of oil in hole.
Marileen Oil and Goering Bros.' No. 1 Decker, NW cor. SE Sec. 20-18-1w ..... Set 15-in. pipe 450 ft.

NEMAHA COUNTY

Partland & McKenna's No. 1 Sudbeck, SW NW NW Sec. 20-1-12 ..... Top granite wash 490 ft.; S.D.

OSAGE COUNTY

Jim Edwards' No. 1 Detrich, C NW SE Sec. 21-14-15 .... Machine.

OSBORNE COUNTY

Carmen & Hershey's No. 1 Fritz, C NE NE Sec. 9-10-14w ..... Drlg. 700 ft.

RENO COUNTY

Atlantic Oil Prod. Co.'s No. 1 Phillips, C E½ NW NE Sec. 22-22-6w ..... Drlg. 3,575 ft.
L. H. Wentz' No. 1 Metcalf, SE NE SW Sec. 3-24-7w ... Drlg. 1,710 ft.
Sinclair Prairie Oil Co.'s No. 1 Shepard, SE cor. NW Sec. 22-26-9w ..... Set 15-in. pipe at 302 ft.

RICE COUNTY

Aylward & Trees' No. 1 Belder, SW SE NE Sec. 27-20-7w ..... T.D. 2,615 ft.; U.R. 8-in. csg.
Continental, Empire and Shell's No. 1 Bennett, NW SE Sec. 25-18-8w ..... Siliceous lime 3,132-35 ft.; 500 ft. of oil and mud in hole.
Deitrick et al's No. 1 Fitzpatrick, C NE NE Sec. 30-21-8w ..... S.D. 1,505 ft.
Elwell et al's No. 1 Springer, NE NW Sec. 35-18-10w... S.D. 2,440 ft.
Langston et al's No. 1 Markle, NE SW Sec. 1-20-8w ... Drlg. 1,270 ft.

(Continued on Page 88)

Continental Oil Co.'s No. 1 Graber, NE cor. NW Section 32-21-1w, a wildcat, found Hunton lime at 3,274-93 feet, total depth, and the hole filled 1,400 feet with oil in seven and one-half hours.

Lario Oil & Gas Co. and Shell Petroleum Corp.'s No. 1 Lacquement, NW SW NE Section 6-20-1w, Ritz Pool, which was deepened from 3,440 feet to Wilcox sand at 3,456-64 feet, where the hole filled with water, was plugged back to 3,444 feet and the well pumped 240 bbls. of oil and 5 bbls. of water. It was completed.

Carey and others had material in for No. 1 Bullinger, C NE NE Section 17-20-1w.

Rush and others' No. 1 Johnson, C SE NW Section 10-19-2w, Ritz-Canton Pool, deepened from 2,949 feet flowed 129 bbls. in 24 hours from pay at 2,977-81 feet. It was completed.

McBride, Inc.'s No. 6 Griffith, NE cor. SW Section 14-19-2w, was completed. It pumped 1,083 bbls. in 24 hours from acidized Viola lime at 3,363-69 feet, total depth.

Shell Petroleum Corp.'s No. 8 Meyers-B, NW cor. SE Section 14-19-2w, pumped 867 bbls. of oil in 24 hours from Viola lime at 3,353-69 feet which had been acidized. It was completed.

Wolf Creek Oil Co. and Sinclair Prairie Oil Co.'s No. 2 Dunsford, NE cor. SW Section 23-19-2w, flowed 199 bbls. in a 24-hour potential test, producing from chat at 2,903-57 feet. It was completed.

Darby Petroleum Co.'s No. 5 Coons, NW NE SW Section 20-19-1w, was completed. It flowed 200 bbls. in 24 hours from Viola lime at 3,419-26 feet, which had been acidized.

Kanokla Oil Co. made a location for No. 5 Giffin, NE SW NW Section 14-19-2w. W. C. McBride, Inc. was building rig for No. 8 Giffin, NW NE SW Section 14-19-2w.

Rice County

Slick-Urschel, Inc. made a location for No. 1 Rick, SE cor. Section 17-20-10w, and Slick, Pryor & Lockhart made a location for No. 5 Schurr, NE SE SW Section 21-20-10w, both in the Raymond Pool, Rice County.

Werbros and others completed No. 3 Masemore, NE SW NW Section 18-20-9w, Sharpe Pool. It pumped 736 bbls. from Siliceous lime at 3,316-28 feet.

Slick, Pryor & Lockhart had cellar dug for No. 1 Wilkins-A, NE cor. Section 23-17-10w, Heiken Pool, and a cellar dug for No. 1 Wilkins-B, SW cor. Section 18-17-9w.

Russell County

Empire Oil & Refining Co.'s No. 1 Bender-B, NE cor. SE Section 23-15-14w, Russell County, pumped 385 bbls. in 24 hours from Siliceous lime at 3,361-69 feet and was completed.

Signal Oil Co.'s No. 1 Taylor, SE cor. Section 26-15-13w, found Oswald lime at 3,058-97 feet and pumped 385 bbls. in 24 hours. It was completed.

Foster & Braden's No. 1 Sellens, NE cor. Section 27-15-13w, pumped 69 bbls. a day in a potential test from conglomerate at a total depth of 3,298 feet and was completed.

Sinclair Prairie Oil Co. was building rig for No. 2 Brundgart, SW cor. NW Section 31-12-15w.

Partland & McKenna drilled to the top of granite wash at 490 feet in No. 1 Sudbeck, SW NW NW Section 20-1-12e, Nemaha County, close to the Nebraska State line.

Osage County, Okla., Fields Led in Completed Work; New Producing Zone in Wewoka Area

By JAMES McINTYRE

Revised figures of allowable production in Oklahoma in June effective June 1 at 7 o'clock give Oklahoma City a daily allowable of 188,765 bbls., including 140,191 bbls. from the Wilcox sand zone; 46,835 bbls. from the Simpson zone and 1,739 bbls. from the fault line zone. The Seminole Field outside of Maud and St. Louis-Pearson is granted 71,917 bbls.; Maud, 1,100 bbls.; St. Louis-Pearson, 21,234 bbls.; Asher-Wanette, 1,648 bbls.; Konawa, 2,094 bbls.; Sasakwa, 893 bbls.; Allen, 8,291 bbls.; Sasakwa Townsite, 1,700 bbls.; East Earlsboro Calvin sand, 1,600 bbls.; Tatums, 7,344 bbls.; Fish, 2,510 bbls.; Crescent, 5,000 bbls.; Lucien, 10,000 bbls.; Keokuk, 1,500 bbls.; Fish Simpson sand, 322 bbls.; South Burbank, Naval Reserve and Chandler Pools are listed among the unprorated areas, the total allowable of which is 185,000 bbls., an increase of 8,038 bbls. over the April and May allowable. The County Line area on the border of Lincoln and Creek Counties, sometimes known as the Lin-Creek Pool, was granted 550 bbls., Orlando 150 bbls. and the Lucien Hunton lime zone 50 bbls.

Osage County supplied an unusual number of completed and near-completed wells to the State's total in the past week, and the South Burbank Pool in Osage County and the Lucien Pool in Noble County are credited with the largest new producers. The most interesting completion in the Greater Seminole area was Fleetborn and others' No. 1 Bowley, NE NE SW Section 27-8-8, east of Wewoka, which opened up a Wilcox sand producing zone at 4,193-4,214 feet. The well swabbed 720 bbls. of oil in 14 hours. The Texas Co. has staked an offset location, No. 1 Reed, NW NW SE Section 27-8-8, and Stanolind Oil & Gas Co. and Amerada Petroleum Corp. are expected to offset it to the north.

The Jarvis & Holm and the Winona Oil Co.'s No. 1 Meyers, SE SW NE Section 31-7-8, in the Holdenville district, Seminole County, had Simpson dolomite at 4,187 feet and drilled to 4,216 feet. It flowed 500 bbls. of oil and water in one hour and was shut in. It had not been tested up to the writing of this review.

Operations in other parts of the State were largely routine.

Oklahoma Production

Estimated daily average production in the week ending June 2 and the preceding week was as follows:

Pool—	Barrels June 2	Barrels May 26
Allen	8,675	8,510
Blackwell district	5,100	5,050
Bristow-Slick	10,250	10,250
Cushing-Shamrock	13,750	13,750
Chandler district	6,500	6,250
Davenport	750	750
Healdton	9,100	9,300
Hewitt	5,000	5,000
Burbank	9,100	9,100
South Burbank	5,100	5,200
Balance of Osage	24,750	24,750
Lucien	11,110	7,760
Crescent	4,495	7,160
Mafshall-Lovell	1,000	1,000
Bowlegs	10,005	10,790
Carr City	4,560	7,095
Earlsboro	9,200	10,525
East Earlsboro	10,170	12,270
South Earlsboro	1,130	1,330
Little River	11,570	14,915
East Little River	910	725
Seminole	12,345	11,250
East Seminole	1,040	1,175
Searight	2,665	2,710
Maud	1,270	1,270
Mission	3,420	3,650
St. Louis-Pearson	18,300	25,820
Cromwell	4,650	4,650
Papoose	1,350	1,350
Oklahoma City	158,455	177,030
Asher-West Asher	1,985	2,025
Tatums	6,625	6,895
Sholem-Alechem	4,500	4,550
Duncan	4,350	4,650
Tonkawa-Garber-Thomas.	6,800	6,800
Fish	2,700	2,720
Konawa	2,145	2,280
Gray	2,070	2,310
Graham	3,600	3,550
Holdenville	3,050	3,255
Wewoka	4,450	4,500
Yale-Jennings	5,100	5,100
Other fields	68,960	63,135
Total	476,955	511,055

Osage County

Completions in Osage County in the past week included the following wells and their initial daily production: Reva Oil & Gas Co.'s No. 2, 1,228 feet north and 250 feet west of SE cor. Section 30-28-11, sand 1,300-43 feet, shot with 120 quarts, 10 bbls.

Midco Oil Co.'s No. 3 Adlum, SE SW NW Section 10-25-6, South Burbank Field, sand at 2,780-2,845 feet, 1,610 bbls. in 48 hours, flowing naturally, and 1,000,000 feet of gas per day.

Midco Oil Co.'s No. 4 Adlum, C NE NE NW Section 10-25-6, sand at 2,679-2,755 feet, flowed 3,592 bbls. in 48 hours with 1,500,000 feet of gas per day, flowing naturally.

Champlin Refining Co.'s No. 2 Maker, C SW SW NE Section 15-25-6, sand at 2,768-2,834 feet, shot with 30 quarts. 360 bbls. in 15 hours, with 750,000 feet of gas per day.

Champlin Refining Co.'s No. 1 Terrill, C NW NW SE Section 15-25-6, sand at 2,740-96 feet, shot with 30 quarts, 200 bbls. in 10 hours.

Phillips Petroleum Co.'s No. 2 Bean, S C SE SE SW Section 15-25-6, sand at 2,750-2,806 feet, shot with 20 quarts, 316 bbls.

J. E. Morrison's No. 2, 800 feet north and 200 feet west, SE cor. Section 35-25-11, sand at 1,602-64 feet, shot with 100 quarts, pumped 35 bbls. in 24 hours.

Champlin Refining Co.'s No. 13 Kennedy, SW SE SE Section 16-24-7, Naval Reserve Field, sand at 2,556-2,652 feet, shot with 120 quarts, flowed 360 bbls. in 24 hours.

Lewis Production Co.'s No. 4, C NE SE SW Section 21-24-7, sand at 2,684-2,713 feet, shot with 30 quarts, flowed 240 bbls. in 24 hours.

Lewis Production Co.'s No. 4, 980 feet from north line and 300 feet from west line of NE Section 28-24-7, sand at 2,-630-97 feet, shot with 80 quarts, swabbed and flowed 260 bbls. in 24 hours.

Lewis Production Co.'s No. 5, NW SW NE Section 28-24-7, sand at 2,624-2,707 feet, shot with 100 quarts, 240 bbls. in 16 hours.

Skelly Oil Co.'s No. 3, NE SE NW Section 28-24-7, sand at 2,579-2,677 feet, shot with 120 quarts, flowed 268 bbls. in 24 hours.

A. Beck's No. 1, SW cor. Section 13-24-8, Bartlesville sand at 2,172-2,209 feet, shot with 160 quarts, pumped 40 bbls. of oil and 15 bbls. of water in 24 hours.

Near Completions

A number of wells in Osage County are in the sand which are interesting.

Empire Oil & Refining Co.'s wildcat test in the SE cor. NE Section 3-25-3, found a sand at 2,403-23 feet, from which it bailed 3 bailers of water per hour. Layton sand was found at 2,570-2,621 feet from which it pumped 127 bbls. of oil and 60 bbls. of water and later pumped 27 bbls. of oil and 27 bbls. of water in six hours. The crew was testing.

Carter Oil Co., Bay Oil Co., and Norbla Oil Co.'s No. 4 Oliphant, NW NE SE Section 10-25-6, in the South Burbank Field, flowed 203 bbls. in 14 hours with gas at the rate of 8,000,000 feet per day, at a total depth of 2,852 feet.

Champlin Refining Co.'s No. 2 Terrill, NE NW SE Section 15-25-6, had broken sandy shale at 2,785-2,852 feet with no showing of oil, but with water at 2,847-52 feet. It was shut down for orders. It is a location away from a 200-bbl. well on the same lease.

Phillips Petroleum Co.'s No. 5 Bean, SW SE NW Section 15-25-6, had Burbank sand at 2,775 feet and it was intended to set 6-inch pipe and shut the well in. No. 6, on the lease, C SW SW NW Section 15-25-6, had the top of the Burbank sand at 2,828 feet and cemented 6-inch casing.

Skelly Oil Co.'s No. 2-C DeNoya, C NE NE SE Section 16-25-6, had Burbank sand at 2827 feet with a small showing of oil at 2,846-65 feet, 3 bailers per hour of water was taken from the hole at 2,871 feet, the total depth. The hole was plugged back to 2,867 feet and shot with 80 quarts at 2,827-67 feet but there was no flow. Fifteen hundred feet of water and 200 feet of oil rose in the hole and the operation was shut down for orders.

Sinclair Prairie Oil Co.'s No. 2, NE cor. Section 21-25-6, had sand at 2,734-55 feet and flowed 150 bbls. in 12 hours. It was to be shot.

Texas Co.'s No. 10, NW NW NE SE Section 30-25-8, found Burgess sand at 2,475-90 feet and shot it with 30 quarts. The hole bridged.

Sinclair Prairie Oil Co.'s No. 1, SE cor. Section 2-24-6, had broken sandy shale at 2,677-2,729 feet and sand at 2,-729-31 feet which was showing 5 bailers of water per hour.

Champlin Refining Co.'s No. 14 Kennedy, SE SW SE Section 16-24-7, had Bartlesville sand at 2,622 feet and was drilling at 2,646 feet, in sand, with 1,-000 feet of oil in the hole. No. 15, on the lease, SE NW SE Section 16, had 1,500 feet of oil in the hole from sand at 2,598-2,630 feet, still in sand.

Continental Oil Co. and Gypsy Oil Co.'s No. 7, NE NW NE Section 21-24-7, topped Bartlesville sand at 2,600 feet with first oil at 2,605 feet and drilled to 2,670 feet. The well was flowing 50 bbls. per hour. No. 8 on the lease, NW NE NE Section 21-24-7, flowed 40 bbls. per hour from sand at 2,585-2,643 feet. Neither well had been shot.

E. G. Todd had a fishing job for a bailer in his No. 7, NE SW SW Section 3-23-8. The well had been shot in Skinner sand at 2,075-2,113 feet and swabbed 100 bbls. in 48 hours and then the bailer was lost.

New work in the county first reported in the past week included D. D. Simon's No. 1, SW cor. NW Section 32-29-12, a location; Magnolia Petroleum Co. and Texas Co.'s No. 2, SW NW SW Section 11-26-6, cellar; Champlin Refining C.o's No. 6, NW NE NE Section 15-25-6, rigged up; Phillips Petroleum Co.'s No. 7, NW cor. Section 15-25-6, building rig; Champlin Refining Co.'s No. 17, NW SE SE Section 16-24-7, building rig; No. 18, on same lease, SW NE SE, building rig; Lewis Production Co.'s No. 6, SW cor. NE Section 28-24-7, rig; Skelly Oil Co.'s No. 4, SE cor. NW Section 28-24-7, rig; Lewis Production Co.'s No. 3, NW cor. SE Section 28-24-7, location; same company's No. 1, NE cor. SW Section 28-24-7, rig; Tulsa Osage Oil Co.'s No. 1,

Wildcat Operations in Oklahoma

Week Ending June 2

Northern Oklahoma

ATOKA COUNTY

Company, farm and location— Remarks:

Malernee et al's No. 1 Greenville, N. B., NW SW Sec. 25-2s-13e ..... S.G. 1,665-77 ft.; S.D.

ALFALFA COUNTY

Acre et al's No. 1 Acre, C SW NE Sec. 14-24-11w ..... T.D. 6,460 ft.; making a small flow of oil once a week.

CADDO COUNTY

Denver Prod. & Ref. Co.'s No. 1 Noe, NW SW SW Sec. 34-10-16w ..... T.D. 9,982 ft.; fishing for core head.

CLEVELAND COUNTY

Phillips Pet. Co. et al's No. 1 Baker, C SE NW Sec. 11-9-2w ..... Drlg. 1,810 ft.

COAL COUNTY

Moore & Deaner's No. 1 Edward, NW NE SE Sec. 21-3-9 ..... Cored lime 4,858-61 ft.

Emanuel, Rudman & Hatcher's No. 1 Moyer, C SW SE NW Sec. 7-1-3 ..... T.D. 1,285 ft.; U.R. 8-in. pipe.

GARFIELD COUNTY

Ross Cummings et al's No. 1 Gage, SE NW Sec. 27-22-3w ..... Spudded.

GARVIN COUNTY

Denver P. & R.'s No. 1 Newburn, C SE SW Sec. 22-5-1e. Drlg. 4,595 ft.

HUGHES COUNTY

Dickison et al's No. 1 Webster, NW NE Sec. 32-10-10.. Rig on ground.

J. B. Hill's No. 1-A Perkins, C W½ SW SW Sec. 7-5-9.. T.D. 1,075 ft.; S.D.

Olympic Oil Co.'s No. 1-A McClassen, SE NW NW Sec. 12-9-8 ..... Drlg. 950 ft.

Olympic Oil Co.'s No. 1 McClassen, SE NW NW Sec. 12-9-8 ..... T.D. 600 ft.; lost tools; S.D.

Scruggs et al's No. 1 Black, NE Sec. 13-9-10 ..... Wilcox sand 3,922-29 ft.; S.W.

GRANT COUNTY

W. Earl Witt et al's No. 1 Patton, SW SE Sec. 19-29-3w. Digging pits.

KAY COUNTY

Argo O. & G. Co.'s No. 1 Freese, SW NE NW Sec. 30-25-1w ..... Drlg. 4,253 ft.

KINGFISHER COUNTY

Jadeka Dev. Co.'s No. 1 Frakes, C SW NE SW Sec. 16-15-6w ..... S.D. 3,068 ft.

KIOWA COUNTY

Bailey & Johnson's No. 1 Patta, SW NW Sec. 31-7-14w.. Drlg. 230 ft.

LEFLORE COUNTY

East Okla. Oil & Gas Co.'s No. 1 Metcalf, SW cor. Sec. 2-4-26 ..... Drlg. 1,505 ft.

Murdock et al's No. 1 fee, SW NE SW Sec. 15-5-25e.... T.D. 2,425 ft.; fishing.

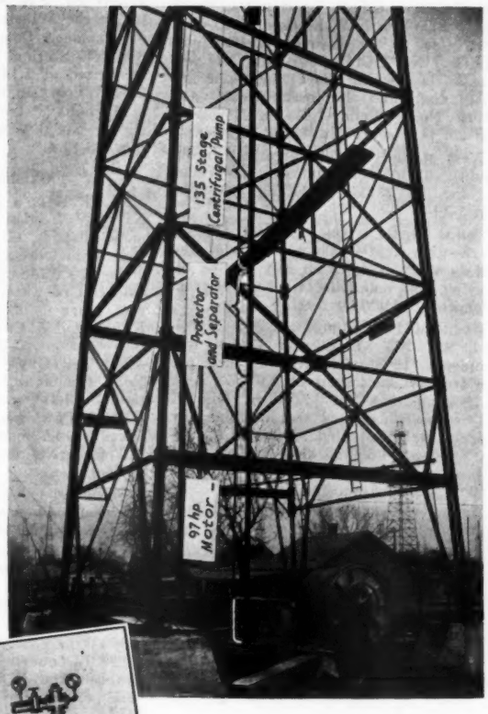
LINCOLN COUNTY

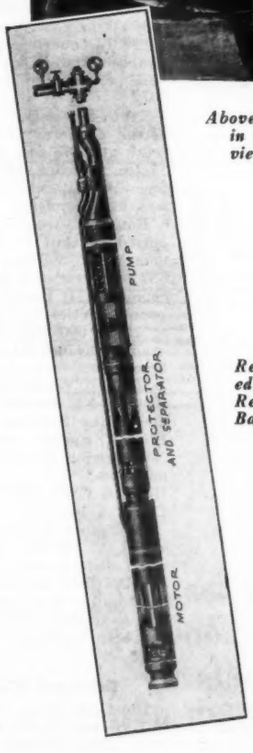
Harvey Newman Oil Co.'s No. 1 Rueb, C NW NE Sec. 23-15-5 ..... Cellar

Mid-Continental Oil Co.'s No. 1 Bolby, NE SE Sec. 27-12-2 ..... Moving in rotary.

The Texas Co.'s No. 1 Gessmann, SE NE Sec. 33-14-4 .... C.O. 4,240 ft.

(Continued on Next Page)





Above: Picture of Reda pump in operation. Left: Sectional view of a Reda Pump.

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Commercial Department

OKLAHOMA CITY **OKLAHOMA**

NW cor. Section 24-24-8, rigged up; Felix Quinlan's No. 5, CNL SW Section 26-24-8, cleaning out to deepen from 1,840 feet; F. A. Haver's No. 9, NW SE SE SW Section 16-23-11, location; Superior Oil Co.'s No. 1, CNL SE Section 5-22-11, rigged up to deepen from 1,709 feet; Texas Co.'s No. 1, CNL SW Section 17-21-10, set 5-inch casing at 2,113 feet to deepen from 2,070 feet; J. R. Higgins' No. 1, SW cor. SE Section 25-21-10, set 8-inch casing at 850 feet, drilling at 1,005 feet; W. C. Norris' No. 2, SE cor. SW Section 29-21-11, drilling at 500 feet.

Grant County

W. Earl Witt and others were having pits dug in preparation for a test, No. 1 Patton, SW cor. SE Section 19-29-3w, a wildcat in Grant County, close to the Sumner County, Kansas, line.

Garfield County

Sinclair Prairie Oil Co.'s No. 65 Hartley, NW Section 18-22-3w, Garber Pool, Garfield County, was deepened from 1,409 feet to 1,460 feet and then abandoned.

Noble County

Texas Co. and others' No. 1 Voss, SW NE SE Section 28-22-2w, Noble County, was drilling at 4,581 feet. It has thus far penetrated Herrington lime, Foraker lime, Oread, Tonkawa sand, Layton sand, Oswego lime and Bartlesville sand, the last named topped at 4,575 feet. None of the formations showed oil, gas or water.

Magnolia Petroleum Co. was digging pits and cellar for No. 1 Crawford, SE cor. NW Section 27-21-2e.

In the Lucien Field, in Noble County, Carter Oil Co. completed its No. 1 Henn, C NW SE Section 29-20-2w. It made 3,327 bbls. in 12 hours from Wilcox sands at 4,972-5,012 feet and 5,085-5,174 feet.

Magnolia Petroleum Co.'s No. 2 Long, C NW SE Section 20-20-2w, found first Wilcox sand at 5,026-85 feet and 32,000,000 feet of gas and a spray of oil at 5,060-65 feet. The gas decreased to 4,000,000 feet but the oil increased to 75 bbls. per hour. Second Wilcox sand was found at 5,130 feet and the well was drilling at 5,135 feet.

Skelly Oil Co.'s No. 2 Long, C SW NW Section 28-20-2w, had a showing of oil at 4,971-84 feet, and first Wilcox sand at 5,005-57 feet. It flowed 864 bbls. the first 24 hours with 1,000,000 feet of gas, the big pay lying at 5,038-42 feet. The well was drilling at 5,090 feet.

Lucien Consolidated's No. 2 Miller, C NE SE Section 18-20-2w, missed the Viola lime; had Simpson dense at 4,490 feet; dolomite at 4,993 feet, and set 8⅝-inch casing at 4,995 feet, and the crew was waiting for cement to set.

Continental Oil Co. and others' No. 1 Bennett, a wildcat, C SE SE NW Section 19-20-1w, was drilling at 4,630 feet.

Pawnee County

In Pawnee County, Stanley Martin deepened his No. 10 Cotton, SE cor. SW Section 6-20-8, from 2,517 feet to 2,755 feet, and abandoned it as dry.

Leas & Moore spudded in No. 1 Sango, SE NE SW Section 35-20-9.

Creek County

The following wells were completed in Creek County in the past week in review:

Comail Oil Co.'s No. 5 Brewer, NW SW NE Section 8-18-7, Creek County, Bartlesville sand at 2,460-2,510 feet, pumped 60 bbls. the first 24 hours.

Suppes & Thomas' No. 1 Brown, NE SW NE Section 16-18-8, Red Fork sand at 2,728-62 feet, shot with 80 quarts, pumped 15 bbls. in 24 hours.

J. O. Shaffer's No. 1 Roobe, NE SW NE Section 31-18-8, Bartlesville sand at 2,910-50 feet, dry and abandoned.

F. L. Marrs' No. 3 Wilson, NE cor. SE Section 34-18-8, Layton sand at 1,240-66 feet, shot with 170 quarts, 10 bbls.

Texas Co.'s No. 3 Harry, SW cor. Section 35-18-8, Mississippi lime at 3,119-26 feet, dry and abandoned.

Bob Williams and others' No. 1-A May, CWL SW SE Section 36-17-9, Layton sand at 1,112-48 feet, shot with 100 quarts, 10 bbls.

Turner Brothers' No. 1 Berryhill, SW NE SE Section 1-16-11, Glenn sand at 1,740-1,800 feet, shot with 30 quarts, pumped 8 bbls.

Texas Co.'s No. 7 Grayson, NE SW NE Section 35-16-11, Red Fork sand at 1,625-50 feet, dry; Wilcox sand at 2,806-15 feet, dry; hole abandoned.

New work, first reported in the past week in Creek County included Bay State Oil Co.s No. 2 Lasley, SE cor. NW Section 3-17-8, location; J. E. Crosbie's No. 3 Casey, NW cor. SE Section 3-17-8, drilling at 450 feet; Fierson & Kirchner's No. 5 Johnson, CNL SW SE Section 14-7-8, old well deepening, Bartlesville sand at 2,730 feet, drilling at 2,732 feet; W. R. Hughes' No. 1 Bailey, SW cor. NW Section 33-17-10, building rig; McBride's No. 1 Fears, SW cor. NE Section 3-15-7, rigging up; Sinclair Prairie Oil Co.'s No. 4 White, SW NE NW Section 11-14-8, cleaning out to deepen from 2,495 feet.

Payne County

Mulberry Oil Co. deepened No. 3 Fisher, NW SE NE Section 27-19-4, Payne County, from 3,470 feet to Wilcox sand at 3,923-44 feet, and found only water. It was abandoned.

Deep Rock Oil Co.'s No. 1 Harris, SE NW Section 9-18-5, was deepened from 3,623 feet to Wilcox sand at 3,591-3,618 feet and got an 18-bbl. pumper.

Lincoln County

In Township 17-6, west of Drumright, and in Lincoln County, where Lambert Kemp and others have an uncompleted oil well in Misener sand at 3,070-85 feet, which swabbed 10 bbls. an hour, but which has been delayed by reason of the casing having parted, three offset operations have been started. Blackwell Oil & Gas Co. has made a location for No. 1 Ladd, SE NE NW Section 23-17-6, a west offset to the discovery well; Home Gas Co.'s No. 1 Crane, NW SW NE Section 23, is a south offset where pits are being dug, and Lambert, Kemp and others' No. 1 Ladd, NE SE NW Section 23, is a southwest offset location.

West of the Chandler area in Lincoln County, Twin State Oil Co. has cellar dug for No. 3 Cook, SE cor. SW Section 1-14-3.

Coline Oil Co.'s No. 3 Telford, SE NE SE Section 7-14-4, Chandler Field, had Wilcox sand at 4,968-90 feet but no oil showing. The hole filled with water from dolomite at 4,935-50 feet.

Magnolia Petroleum Co.'s No. 5 Telford, SW SE SE Section 7-14-4, was completed. It started at 317 bbls. per day from Wilcox sand at 4,970-72 feet. Same company's No. 6 Telford, NE SE SE Section 17, started at 1,541 bbls. per day and was completed. It has first Wilcox sand at 4,986-96 feet with a hole full of water and second Wilcox sand at 5,012-22 feet, total depth.

Magnolia Petroleum Co. had bad luck with its Nos. 5, 6, and 7 Gillian, all of them being dry holes. No. 5, SE SW SW Section 8-14-4, was drilled to 5,005 feet. The Wilcox sands showed no commercial production and when the hole was plugged back to Peru sand at 4,100-20 feet and it tested dry. No. 6, NW SW SW Section 8, had second Wilcox sand at 5,024-28 feet and salt water, and No. 7, SW SE SW Section 8, had salt water in the Wilcox at 5,024-28 feet.

Solomon & Cooper's No. 1 Jordan, NE SW NE Section 18-14-4, was completed. It started at 1,145 bbls. a day from the first Wilcox sand at 4,972-78 feet.

Magnolia Petroleum Co. was building rig for No. 6 Wagner, SE NW NE Section 18-14-4.

Oklahoma County

H. E. Rapp's No. 1 Price, C E half NE SW Section 19-14-3w, in the Edmond district, Oklahoma County, an oil well drilled deeper from 6,708 feet, was drilled to 6,748 feet to a white sand. A hole full of water followed and the hole was plugged back to 6,733 feet. Mid-Kansas Oil & Gas Co.'s No. 1 Dahl, SE cor. Section 31-14-3w, was drilling at 4,260 feet. Gypsy Oil Co.'s wildcat test, No. 1 Community grant, C SE NW Section 27-13-4w, was drilling at 5,620 feet. It had Pawhuska lime at 3,620 feet; Oread at 4,728 feet, Layton sand at 5,215 feet. No showings of oil were reported.

Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 Seuneram, NE cor. Section 6-13-3w, was drilling at 3,980 feet.

In the Oklahoma City Field, the Abilene Oil Co.s' No. 2 Community, 980 feet from the south line and 410 feet from the east line of SW Section 34-12-3w, shot Wilcox sand at 6,377-6,458 feet, with 75 quarts of explosive and it swabbed and bailed an average of 501 bbls. per day for 15 days while cleaning out.

Trans-Mississippi Oil Corp. and Anderson & Kerr's No. 1 Miller, 360 feet south and 673 feet east of C Section 15-11-3w, flowed 2,483 bbls. in eight hours from Wilcox sand at 6,410-6,525 feet. It was not completed.

Banner Petroleum Co.'s (formerly reported as Gulf Production Co. of Oklahoma) No. 3 Tulls, 403 feet north and 337 feet west of C Section 22-11-3w, was completed. It flowed 966 bbls. in a four-hour potential test with gas at the rate of 15,000,000 feet per day from Wilcox sand at 6,476-6,531 feet which had twice been shot.

Royalty Service Corp.'s No. 1 Fain, SW SE NE Section 22-11-3w, was spudding; Ray Stephens and others' No. 1, Block 7, Spencer Addition, CEL SE SE NW Section 22-11-3w, a location; same operators' No. 1, Block 17, Carney Heights, CWL SW SE NE Section 22-11-3w, a location.

Springrose Drilling Co.'s No. 1 Edwards, C SE SE Section 19-11-1e, Newalla district, Oklahoma County, drilled to 6,297 feet, but was troubled with cavings and a new hole was started at 6,252 feet, above the Sylvan shale which had been topped at 6,282 feet in the old hole.

Tulsa and Wagoner Counties

Boyd and others' No. 9 Horn, SE NE NW Section 23-18-14, Broken Arrow district, Tulsa County, was drilling at 200 feet. A. B. Ice's No. 1-B Flippin, SW NE SW Section 28-18-14, lost the casing and was abandoned at 1,470 feet. It had no showings. Same operator was cleaning out to deepen No. 1-A Flippin, C E half NE SW Section 28-18-14, old total depth 1,260 feet.

Helvie & Stout were drilling at 800 feet in No. 1-A Atkins, SW NW NE Section 2-17-15, Wagoner County, and B. G. Goble was rigged up to start No. 1 Martin, SE NE NE Section 3-17-15.

Crews and Armstrong made a location for No. 4 Squire, SE NW SE Section 8-16-14.

Okmulgee and Wagoner Counties

Harmon Brothers were rigged up on No. 1 Harjo, NE cor. Section 7-15-12.

Wildcat Operations in Oklahoma

(Continued from Preceding Page)

LOGAN COUNTY

W. N. Anthony's No. 1 Fruin, SE SW Sec. 4-16-1 .....Set 15-in. pipe 140 ft.

McCLAIN COUNTY

Carter Oil Co. et al's No. 1 Hanner, SW NE NW Sec. 24-5-1w .....Abd. 6,526 ft.; lost drill pipe.

NOBLE COUNTY

Continental Oil Co. et al's No. 1 Bennett, SE NW Sec. 19-20-1w .....Drlg. 4,630 ft.
Magnolia Pet. Co.'s No. 1 Crawford, SE NW Sec. 27-21-2.Digging pits and cellar.
Texas Co. et al's No. 1 Voss, C NE SE Sec. 28-22-2w....Drlg. 4,581 ft.

JOHNSON COUNTY

Okla. Oil Corp.'s No. 1, SW NE SE Sec. 11-2s-8.....Cellar.

OKFUSKEE COUNTY

Delton Oil Co.'s No. 1 Fixico, SE cor. Sec. 7-11-8.....Rig on ground.

OKLAHOMA COUNTY

Gypsy Oil Co. et al's No. 1 Harris, C SW NE Sec. 27-13-4w .....Drlg. 5,620 ft.
Springrose Drlg. Co.'s No. 1 Edwards, C SE Sec. 19-11-1 .....Drlg. in new hole 6,252 ft.

OSAGE COUNTY

Norbla Oil & Gas Co.'s No. 1, NW SE Sec. 21-24-7 .....Drlg. 570 ft.
Peters Pet. Co. and Norbla Oil Co.'s No. 1, SW cor. Sec. 15-25-5 .....Drlg. 1,425 ft.
Empire O. & R. Co.'s No. 1, SE NE Sec. 3-25-3 .....Drlg. Layton sand 2,570-2,621 ft.; testing.

PAWNEE COUNTY

Geo. Thomas' No. 1 School Land, SW cor. Sec. 13-20-5..Drlg. 3,260 ft.

PITTSBURG COUNTY

Arkhoma's No. 1 Cummings, NW NE SE Sec. 6-4-12... Fishing 515 ft.
Exchange Drlg. Co.'s No. 1 Chunn, SE NW Sec. 29-4-14..Drlg. 350 ft.
W. E. Hailey's No. 1 Drew, NW SW Sec. 21-3-14 .....S.D. 190 ft.
Mid-Western Oil & Gas Co.'s No. 1 Shelton, CSL SE NW Sec. 7-7-13 .....Drlg. 2,306 ft.
Moffett & Hall's No. 1 Jones, C NE NW Sec. 14-8-14 ....Lost tools; T.D. 3,200 ft.; S.D.
C. L. Carlock's No. 1 Chunn, SE NW Sec. 29-4-14 .....Rigging up.

PONTOTOC COUNTY

E. M. Blanchard's No. 1 Crabtree, NE SE NE Sec. 27-2-6..S.D. 2,920 ft.
Boyle et al's No. 1 Newbern, SW NE Sec. 31-5-4 .....Drlg. 2,190 ft.
Dandridge et al's No. 1 Stafford, NW cor. Sec. 5-1-6e..T.D. 668 ft.; csg. collapsed.
Riddle et al's No. 1 Barnes, SE NW SE Sec. 21-5-4 .....Set 12-in. pipe at 93 ft.

POTTAWATOMIE COUNTY

Stanolind-Amerada's No. 1 Goodman, SW NE NE Sec. 5-10-4 .....Rig.

SEMINOLE COUNTY

Harman Oil Co.'s No. 1 Bowlegs, SE NE SW Sec. 1-7-7 .....T.D. 1,655 ft.; U.R. 5-in. csg.
Flemlee et al's No. 1 Bowlegs, SE NE SW Sec. 1-7-7....S.D. 1,260 ft.
Tate & Starbuck's No. 1 Heard, SE NW Sec. 9-6-7.....Drlg. 935 ft.

Southern Oklahoma

ATOKA COUNTY

J. D. Boukan's No. 1 Howard, NW SW NW Sec. 20-2s-10e. Drlg. 1,135 ft.
Brookshire et al's No. 1 Rowland, NW NE NE Sec. 15-2s-10e .....Drlg. 3,537 ft.

CARTER COUNTY

George Pace et al's No. 1 Jack, NE NW NW Sec. 24-4s-4w .....Spudding 50 ft.
Hudson & Poland's No. 1 Sullivan, NE SE Sec. 5-5s-1w..Drlg. 1,160 ft.
McHenry et al's No. 1-A Ratliff, NW SW Sec. 28-1s-2w..Moving in rotary.

COMANCHE COUNTY

Heiden & Taylor's No. 1 Crutcher, SW cor. NE, Sec. 11-1n-12w (O.W.D.D.) .....Drlg. 1,196 ft.
C. F. Stevens' No. 1 Green, SE SW Sec. 11-1n-12w.. ...Drlg. 888 ft.
Heiden & Taylor's No. 2 Crutcher, C NE Sec. 11-1n-12w.T.D. 1,196 ft.; C.O.

COTTON COUNTY

Ben Russell's No. 1 Zumbuemn, NE cor. SW Sec. 21-4s-12w .....Drlg. 1,410 ft.

GARVIN COUNTY

National Prod. Co.'s No. 1 Littrell, NE cor. Sec. 31-3n-3w. S.D. 299 ft.

MARSHALL COUNTY

Paul Robb's No. 1 Vittetoe, C NE SE Sec. 11-5s-4e.....T.D. 4,937 ft.; drill pipe stuck.

MURRAY COUNTY

Gilcrease Oil Co.'s No. 1 Brown, SW cor. Sec. 26-1n-2e Drlg. 1,300 ft.
T. E. Revell et al's No. 1 Wolfe, NE cor. Sec. 18-1-2....T.D. 2,315 ft.; run liner.

PUSHMATAHA COUNTY

J. V. Scrivener et al's No. 1 Swink, C NE SE Sec. 29-5s-19e .....Setting csg. 410 ft.
Whitehead et al's No. 1 Messer, SE SW SW Sec. 35-2s-18e. T.D. 2,405 ft.; S.D.

STEPHENS COUNTY

J. W. Madison's No. 1 Tussey, SW SE NW Sec. 24-1n-4w..S.D. 3,210 ft.

TILLMAN COUNTY

F. W. Everett's No. 1 Crane, SW cor. Sec. 15-3s-14w .....Rig
Ben Russell's No. 1 Fowler, SE NW Sec. 21-4s-12w.. ...Rigging up.

Okmulgee County. J. Summers was drilling at 760 feet in No. 6 McKinney, SW NW NW NW Section 16-15-14. Colton and Phillips Petroleum Co. were drilling at 500 feet in No. 2 Jackson, a twin, NE SW NE Section 20-13-13.

Penrod, Inc.'s No. 1 Edwards, SE NE NE Section 30-12-14, McIntosh County, old total depth 2,862 feet, will be drilled deeper but the crew was having a fishing job for casing at 2,700 feet.

Okfuskee County

Olean Petroleum Co.'s No. 3 Fish, SE NE NW Section 36-10-11, was completed in sand at 3,197-3,209 feet. It swabbed 40 bbls. of oil and 18 bbls. of water in 24 hours.

Greater Seminole Area

Darby Petroleum Co. and Arthur Lippa's No. 1 Nedeau, C NE SW Section 19-9-5, Earlsboro area, was completed. It flowed 268 bbls. in 24 hours from Hunton lime topped at 4,062 feet, total depth 4,105 feet, in Sylvan shale. It had twice been acidized.

Turman Oil and Phillips Petroleum Co.'s No. 1 Carpenter, SW SE NE Section 4-8-5, was completed. It had Hunton lime at 3,993-4,005 feet. It was twice acidized. It is a 50-bbl. well.

Kennedy and others abandoned the location for No. 1 Meyers, SW NE NW Section 6-7-4, on which a rig had been built.

Royce and others' No. 1 Warren, 220 feet from the north line and 1,340 feet from the east line, SE Section 28-7-8, was abandoned at 1,530 feet. The 6-inch casing collapsed. It had Calvin sand and a hole full of water at 1,212-52 feet.

Mid-Continent Petroleum Corp.'s No. 2 Upton, NE cor. Section 1-6-4, in the Asher district, was completed. It pumped 240 bbls. per day from Viola lime at 4,010-45 feet, which had been acidized.

Mainard and others had machine in for No. 6 Moore, C E half NW NE Section 22-7-8, Holdenville area. Royce and others had machine on the ground for No. 7 Walker, NE cor. SW Section 22-7-8, and a location was made for Roush's No. 3 Moore, NE NW NE NE Section 22-7-8. No. 2 Moore was showing for an oil well at 1,182-1,203 feet. Jones and others had cellar and pits dug for No. 2 Lucas, SW NE NW Section 2-6-4. Westgate Oil Co. made a location for No. 1 Schrader, NE NW NE Section 6-6-5.

Garvin and McClain Counties

Carter Oil Co.'s test in McClain County, No. 1 Hanner, SW NE SW Section 24-5n-1w, was abandoned because the drill pipe was lost in the hole. It was in Simpson sand at 6,500-26 feet, total depth when the trouble came. The test had no oil or gas showings on the way down excepting a small showing of oil saturation in a core taken at 5,860-65 feet. Top of the Woodford shale was found at 5,923 feet and top of the Hunton lime at 6,030 feet, Sylvan at 6,275 feet and Viola at 6,425 feet.

Denver Producing & Refining Co.'s 6,000-foot test in Garvin County, No. 1 Newburn, C SE SW Section 22-5n-1e, was drilling at 4,595 feet.

Pontotoc County

In Pontotoc County, Moore and Deaner had a rig up for No. 1 Burke, SE NW NE Section 25-5-4. Concord Oil Co.'s No. 1 Flatt, NE cor. SE Section 36-5-4, swabbed 100 bbls. in a late test. This well flowed 450 bbls. recently from the top of the Hunton lime at about 2,200 feet and later flowed 205 bbls. in two flows in 24 hours. It had not been drilled any deeper, nor had it been treated with acid.

Dickison Petroleum Corp. was deepening No. 2 Jackson, NW SW SW Section 22-5-6, from 1,745 feet. It found a sand at 1,779-90 feet and swabbed and flowed 70 bbls. in 24 hours following a 5-quart shot.

Blackstock and others' No. 1 Lewis, NE cor. SE Section 19-2-7, had 2-inch tubing run to 4,050 feet and the well flowed 27 bbls. the first 24 hours. Standard tools were being rigged up. It was bottomed at 4,545 feet with the top of the Simpson dense at 4,470 feet and was treated with 1,500 gallons of acid and a load of 1,000 feet of oil in the hole, but would not flow before the tubing was run.

Magnolia Petroleum Co.'s No. 1 Lewis, SW cor. Section 19-2-7, cored at 3,720-38 feet and had an oil showing in the uppermost 2 feet. The core hole was being reamed. Misener sand was topped at 3,712 feet.

Carter Oil Co. and Magnolia Petroleum Co. were building rig for No. 1 Harrison C-34, C NW NW Section 28-3n-5w, southern Grady County.

Marshall County

F. Clark and others were drilling at 150 feet in No. 1 Adams, NW SW NE Section 6-8s-6e, Marshall County.

R. A. Godfrey completed No. 2 Burge, NE NW SE SE Section 25-7s-5e, a 35-bbl. pumper at 534-41 feet.

Jefferson County

O. V. Beck's No. 10 Seay (twin to No. 5), NE NW SW SE Section 34-6s-5w, Jefferson County, pumped 120 bbls. of oil and some water in 12 hours from pay at 1,573-76 feet. Same operator's No. 3 Seay, SW SE NW SE Section 34-6s-5w, had 12-inch surface pipe set.

Stephens County

Owl Oil Co. was rigged up to start No. 32-A Billy, SW NE NW SE Section 9-3s-5w, Stephens County. Shasta Oil Co. was drilling at 1,432 feet in No. 2 Smith, NW SW NE Section 31-1s-9w. Mudge Oil Co. was drilling at 50 feet in No. 34 Woods, NW cor. Section 26-1s-5w.

Carter County

Skelly Oil Co. completed No. 4 Pierce, NW NE SW Section 8-2s-2w, Carter County, a 12-bbl. well from a sand series, total depth 2,880 feet, and Magnolia Petroleum Co. completed No. 1-A James at 2,563 feet, which started at 90 bbls. a day. Skelly Oil Co. has made a location for No. 1 Brooks, NW cor. SE Section 17-2s-2w.

Lloyd Oil Co.'s No. 1 Higgins, NE cor. NW Section 36-1s-3w, was dry and abandoned at 3,146 feet.

McHenry and others were moving in rotary to start No. 1 Ratliff, NW cor. SW Section 28-1s-2w.

Johnston County

Oklahoma Oil Corp.'s No. 1 Unnamed, SW NE SE Section 11-2s-8e, Johnston County, will be a 4,200-foot test. The cellar is dug.

DEATH OF FITCH ADAMS

Fitch J. Adams, one of the oldest surviving oil well contractors in the Pennsylvania Grade fields, died at his home in Bradford, on May 23, at the age of 84 years.

He was employed in the lumber woods near Bradford in 1863 when he decided to try the oil business, although he was only 14 years old. He left for the Venango County fields and found a job and in a few years became a drilling contractor in the Petroleum Center Field.

Mr. Adams drilled all over the Pennsylvania Grade territory, and as a side line drilled many wells in search of salt in New York State in the Warsaw, Silver Springs and Watkins Glen areas. He remained active until past his seventieth year and then retired to his old home in Bradford to spend the remaining years of his life.

D. B. SEYMOUR DIES

LOS ANGELES, Calif., June 2.—D. Bruce Seymour, geologist for the Continental Oil Co., died at a hospital in San Bernardino as a result of burns from stumbling into a camp fire. The accident occurred during preparations for a barbecue feast for 30 couples on the mountain ranch of Dr. Robert Mattice near San Bernardino.

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New Areas in South Louisiana Are Very Active; Splendora District Well Nearing Critical Depth

By A. C. EASTERWOOD
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., June 4.—Active development for the two newly discovered deep seated salt dome producing areas in Louisiana, along with Humble Oil & Refining Co.'s well at Splendora in Montgomery County now at the critical depth, has made another very active week for the Gulf Coast.

Shell Petroleum Corp.'s No. 1 Kratzer, which opened the second new producing area within a month in southern Louisiana, when it came in flowing at the rate of 1,035 bbls. per day, has been shut in since filling its 4,500 bbls. of storage. However, the 3½ miles of 3-inch pipe line from the well to a loading rack at Roanoke was scheduled to be completed late in the week. The well, the deepest on the Gulf Coast, had sand from 8,665-82 feet with the last 4 feet carrying saturation. It topped the Discorbis at 7,650 feet, had top of Heterostegina at 7,976 feet, and encountered top of Marginulina at 8,366 feet. Late in the week Shell Petroleum Corp. was rigging up on its No. 1 Jernigan, east offset to the producer, and located 330 feet east and 660 feet south of the NW cor. Section 12-9s-4w. About three-quarters of a mile southwest of the discovery Humble Oil & Refining Co. was moving in material for No. 3 Devilbiss, 1,399 feet west and 466 feet south of the NE cor. Section 14-9s-4w. Humble's No. 2 Devilbiss was recently abandoned as dry at 8,423 feet after numerous attempts to make a producer.

Bosco Campaign

At Bosco on the easternmost limits of Acadia Parish, Superior Oil Co. of California is carrying on a very active wildcat drilling campaign. It now has five wells drilling within a radius of about a mile of the discovery and one ready to spud. Superior's No. 1 P. O. Hermandes proved the Bosco prospect productive about five weeks ago when it came in flowing at the rate of 31½ bbls. per hour through twelve-sixty-fourths inch choke from perforations at 7,845-50 feet. Total depth is 8,916 feet. Superior's No. 1 Leo E. Kahn and others, deepest of the present tests, was below 4,671 feet. The new proration order for the field, issued during the past week, gives it an allowable of 750 bbls. daily.

About 12 miles northwest of the Bosco Field, Woodley Petroleum Co. has spudded on its No. 1 Daigle in the center of the NE SE Section 24-7s-1e. The company has a block of approximately 14,000 acres surrounding the well.

At Splendora in eastern Montgomery County, Humble Oil & Refining Co.'s No. 1 Texas Long Leaf was being watched with much interest during the latter part of the week. The well, about a mile north and slightly east of Steen's well, had sandy shale with streaks of sand from 5,725-29 feet, but had no show of oil or gas. At last report it had cored to 5,749 feet, all of which was sand and shale, and late in the week it was preparing to make a drill stem test. It topped the Discorbis at 2,335 feet, had Heterostegina at 2,560 feet, topped Frio at 2,590 feet, drilled top of Massilina Pratti at 4,700 feet, had top of Hockley at 4,822 feet, and drilled top of Cockfield at 5,647 feet actual or 5,503 feet subsea. This is about 125 feet higher than top of Cockfield in Steen's well but when the dip between the two wells is considered, it is the general belief it is very little higher.

Steen Drilling Co.'s No. 1 Texas Long Leaf, which has held much interest during the past few months, drilled into salt water in its second hole and has been plugged back to complete for a gas well. It had sand from 6,013-21 feet with the last foot reported carrying heavy black oil but on a drill stem test from 6,007-21 feet it showed 32 fourbles of salt water. It was then carried to 6,041 feet and has since been plugged back to 5,840 feet and will be completed in the sand from 5,816-24 feet. Casing was being run at last report. It topped the Cockfield in its second hole at 5,759 feet actual or 5,628 feet subsea.

In the western part of the county and near the Grimes County line, Cooper and Smith's No. 1 Post was drilling at 3,894 feet and coring all breaks. It will be carried to 4,000 feet and then a Schlumberger test will be made of the upper showings. It topped the Cockfield at 3,418 feet with a show of gas. It had sand showing gas from 3,694-2,705 feet.

Cleveland Area

At Cleveland in Liberty County, Gulf Production Co.'s No. 2-C Kirby, south of the discovery well, has been plugged back and cemented to 5,600 feet. It was formerly carried to 8,734 feet where it had to quit when drill stem stuck in the hole. Its No. 4-C Kirby, about 1,700 feet west of the discovery well, was preparing to spud.

San Jacinto County

Across the line in San Jacinto County and northwest of Cleveland, Turnbull & Irwin's No. 1 Foster Lumber Co. was drilling 2,475 feet.

Liberty County

East and a little south of the Cleveland area in Liberty County, H. Sample's No. 1 Security Trust Co., was drilling below 6,100 feet and attracting quite a bit of attention. It topped the Discorbis 3,280 feet, had Heterostegina 3,308 feet, encountered Marginulina 3,310 feet, had Frio 3,338 feet, drilled top of Warreni 4,949 feet, topped Massilina Pratti 5,552 feet, and had Hockley 5,664 feet actual or 5,545 feet subsea.

Gulf Production Co. is reported building up a block south of Wilcox Oil & Gas Co.'s No. 1 Cousins dry hole in the James Knight Survey.

Galveston County

About 4 miles south of Dickinson in Galveston County, George K. Spoor's No. 1 Maco Stewart in the W. K. Wilson Survey was drilling below 5,250 feet in sticky blue shale. Humble Oil & Refining Co.'s No. 1 Maco Stewart, wild about 3 miles north of the Spoor well, had cemented 20-inch surface casing at approximately 170 feet. Both are very important tests. The county is being worked extensively by geophysical crews and a heavy leasing campaign has been in progress for several weeks west and north of the wells to the Brazoria County line. Stanolind Oil & Gas Co. has a three instrument torsion balance crew working south and east of Dickinson. Texas Co. is reported to have a torsion balance crew working between Dickinson and Texas City.

Waller County

In the southeast part of Waller County, Stanolind and Amerada Petroleum Corp.'s No. 1 M. Manor heirs, center of Section 93, H.&T.C. Survey No. 64, was coring sandy shale 6,363 feet. It topped the Hockley 5,385 feet and encountered top of Caddell 6,046 feet actual or 5,859 feet subsea. Capps & Sloan's No. 1 Vaughn, in the southwest part of the county and in the J. McFarland Survey No. 46, was shut down at 2,853 feet. Harrison & Abercrombie is reported to have taken 50 acres in the William Cooper Survey and the Jenkins one-third-third interest in 168 acres on the tract surrounding the well.

Goose Creek

At Goose Creek in Harris County, Miramar Oil Co.'s No. 2 Hughes in the William Scott Survey has been completed in the newly discovered deep Oligocene producing horizon for 500 bbls. daily. It topped sand at 4,548 feet and bottomed hole at 4,551 feet. The 7-inch casing was cemented at 4,487 feet. J. Simmons' No. 1 Kerwin Mitchell, northwest of Miramar's first producer, is shut down waiting orders at 5,034 feet. On a drill stem test from 4,698-4,760 feet it showed 1,050 feet of salt water, oil and gas in 12 minutes. Humble Oil & Refining Co. was driving piling for No. 80 Simms Smith. Operators have erected a 165-foot derrick and it is reported the test will be carried to 12,000 feet if necessary.

In the extreme east and north end of Harris County and in the M. Magruder Survey, W. U. Paul's No. 1 E. M. House had set 10-inch casing at 1,000 feet and was waiting on cement to set.

Hardin County

At Sour Lake in Hardin County, Parr and others' No. 1 Benard, on the west edge of the field, was preparing to pull tubing and plug back. It will whipstock and core to the Cockfield and 6,936-44 feet where it showed good for production several weeks ago before the hole was ruined. Alpha Petroleum Co.'s No. 1 J. M. Weiss, southwest offset to Parr's well, had spudded and set surface casing. Humble Oil & Refining Co. is reported working the area west of Sour Lake with a reflection crew.

Fort Bend County

West of Long Point and south of Big Creek in Fort Bend County, Gem Oil Co. has assembled around 3,000 acres around the E. Jones Scott, Hollingsworth, George Dedrick, S. Miller and Robert Hodges Surveys for a well. It is reported Stanolind and Humble have taken protection in the area.

Raccoon Bend

At Raccoon Bend in Austin County, Humble Oil & Refining Co.'s No. 4-B Rufus Hardy, second Cockfield sand test in the area, has been abandoned as dry at 5,000 feet. The discovery in the Cock-

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field was completed by Humble for a good producer about five weeks ago. Humble now has three more tests drilling in the field; No. 3 Kearns was drilling below 993 feet; No. 2-B Remmert was drilling 917 feet, and No. 13 Thompson was waiting on cement at 1,970 feet.

Brazoria County

At Pledger in Brazoria County, Danciger Oil & Refining Co.'s No. 1-B Hunt in the W. C. Carson Survey, drilled to a total depth of 6,875 feet in sand. It set screen and washed for two and one-half hours and then turned gas into it and the well flowed salt water with only a trace of oil. Operators have pulled screen and will sidetrack. The 7-inch casing was set at 5,857 feet. Danciger Oil & Refining Co. is reported to have taken over 2,000 acres northeast of the Pledger Field and in the Gray and Moore Surveys.

East of Van Vleck and on the Brazoria and Matagorda County line, Harrison & Abercrombie are reported to have taken acreage in Chance and Polley, Johnson, Battle, Berry & Williams and the Johnson and Walker Surveys. Operators are also reported working the area with a reflection crew.

At Manvel in Brazoria County, Texas Co.'s No. 1 Helen J. Way extended the field south during the week when it came in flowing at the rate of 470 bbls. daily through one-quarter inch choke at 5,140 feet in the Oligocene. It is in Lot 20 of the Thomas Spragging Subdivision. Texas Co.'s No. 1 Boff, southwest of the discovery, was drilling below 7,477 feet in hard sand.

Grimes County

Hubert Holt and associates are reported to have worked up a block in Grimes County centering around the C. O. Edwards, Moses Evans and James Cox Surveys for a well.

Refugio County

About 2 miles southwest of Woodsboro, in Refugio County, C. B. Bunte's No. 2 Rooke was drilling at 4,480 feet. Bunte's No. 3 Rooke was shut down for orders at 5,010 feet. In the Bonnie View area, Heard-Holland Oil Co.'s No. 1 Peck in the Bonnie View Subdivision, cored from 5,183-93 feet with a 7-foot recovery which revealed shale and sand carrying water and some oil. Two drill stem tests failed and at last report operators were reaming to core 5 feet deeper.

Jasper County

Alpha Petroleum Co.'s No. 1 Cartwright, northeast of the Spurger area, in Jasper County, set surface casing at 525 feet and at last report was drilling ahead below 760 feet.

Calhoun County

In Calhoun County and between Seadrift and O'Connor, Continental Oil Co.'s No. 1 Moody was drilling below 900 feet. Heep Oil Co.'s No. 1 Welder was drilling hard shale at 6,455 feet. Heep's No. 2 Welder was drilling gumbo at 3,106 feet. Heep is reported working the area around the latter well with a reflection crew.

Victoria County

North of the Keeran Field, in Victoria County, C. & R. G. Drilling Co.'s No. 1 R. C. Roos, in the M. A. Castanon Survey, was reaming 4,960 feet. Petrol Corp.'s No. 1 John Machalic at Coletto Creek topped sand at 2,839 feet and had sand at 2,833-41 feet with the last 2 feet reported showing saturation. On the first drill stem test it showed 11 joints of 28 gravity oil. It was then cored to 2,875 feet and the second drill stem test made, which showed dry.

Wharton County

Pure Oil Co.'s No. 2 Lancaster at Louise in Wharton County was completed during the past week for 395 bbls. of oil daily through twenty-eight-sixty-fourths inch choke. Total depth is 5,147 feet.

SOUTH LOUISIANA

In the Dry Creek area of Beauregard Parish, Humble Oil & Refining Co.'s No. 1 Long Bell has been abandoned as dry with total depth of 9,302 feet. Federal Petroleum Co.'s No. 1 Lutcher-Moore in the NW cor. Section 4-6s-12w, was drilling at 880 feet. Humble Oil & Refining Co. is reported working a four-instrument torsion balance crew in the western part of Township 4s-11w. Ohio Oil Co. is reported working a torsion balance crew in the south part of Township 3s-7w.

On the southern part of the structure of the old Welch Dome in Jefferson Davis Parish, Tide Water Oil Co.'s No. 1 Mrs. A. Bourgeois was drilling shale at 4,635 feet and reported running high. Texas Co. is reported working a torsion balance crew between the Welch Field and Roanoke.

The Iowa Field marked up four new producers during the week. Barnsdall Oil Co.'s No. 1 Caffal was completed for 980 bbls. daily through twenty-four-sixty-fourths inch choke at 6,987 feet. Barnsdall Oil Co.'s No. 5 Fontenot bottomed hole at 6,988 feet and made 140 bbls. daily through one-quarter inch choke with 450 pounds pressure on tubing and 500 pounds on casing. Magnolia Petroleum Co.'s No. 6 Wait was completed for 813 bbls. daily through one-quarter inch choke at 6,917 feet. Shell Petroleum Corp.'s No. 2 Tuten made 1,641 bbls. through twenty-three-sixty-fourths inch choke with 1,200 pounds tubing pressure at 6,722 feet.

In St. Bernard Parish, Danciger Oil & Refining Co. is reported working a three-instrument crew on the old Stanley A. Thompson block in Township 14s-14e.

In Calcasieu Parish, Fred Oil Co.'s No. 1 Faiszt, in the NW SE Section 26-8s-10w, was drilling at 2,810 feet. Operators are reported to have recently taken an additional 1,800 acres in the area.

The new proration order issued allotted southern Louisiana 59,500 bbls. daily. Iowa was increased 1,500 bbls. to 15,000 bbls. daily; East Hackberry 1,000 bbls. to 4,750 bbls., and Cameron Meadows 800 bbls. daily to 1,950 bbls.

Gulf Coast Fields and Wildcats

Week Ending June 2

RACCOON BEND—AUSTIN COUNTY

Company, farm and location—	Remarks:
Humble O. & R. Co.'s No. 4-B Rufus Hardy, 3,086 ft. from S line and 430 ft. from W line of Sec. 49, J. Groce grant	T.D. 5,000 ft.; abd.
Humble O. & R. Co.'s No. 3 Effie Kearns, 270 ft. W of E line, 825 ft. N of S line of 175-ac. lease in W. C. White Sur.	Drlg. hard sand 917 ft.
Humble O. & R. Co.'s No. 5 L. B. Sherwood, W. C. White Sur., Abst. 101	T.D. 3,383 ft.; installing pumping unit.
Humble O. & R. Co.'s No. 2-B Remmert	Drlg. hard shale 917 ft.
Humble O. & R. Co.'s No. 13 Thompson	T.D. 1,970 ft.; W.O.C.

MANVEL—BRAZORIA COUNTY

Shell Pet. Corp.'s No. 2 Gubert, 268 ft. from N and 325 ft. from E line of Lot 29, C. O'Donnell Sur. No. 74.	Location abd.
Shell Pet. Corp.'s No. 3 Gubert, 70 ft. from S line and 40 ft. from W line of Lot 28, C. O'Donnell Sur.	Location abd.
Texas Co. et al's No. 1 Alice & Ritchie, 265 ft. S. 41 deg. 36 min. W. 330 ft. N. 47 deg. 53 min. W of E cor. of Lot 4, Div. E, N. P. Little Sur.	Drlg. shale and lime 2,382 ft.
Texas Co.'s No. 10-B Belcher, 2,658 ft. N. 48 deg. 9 ft. W and 330 ft. N. 41 deg. 51 ft. E of S cor. of lease in H. N. Little survey	Drlg. shale and lime 3,092 ft.
Texas Co.'s No. 1 Boff, 265 ft. from S and 336 ft. from W line of C of Lot 24, H.T.&B. Sur. No. 74	Drlg. hard shale 7,477 ft.
Texas Co.'s No. 1 John Groce, 200 ft. E of W line, 200 ft. from N line at right angles	Derrick.

(Continued on Page 89)

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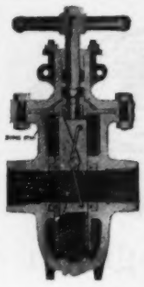

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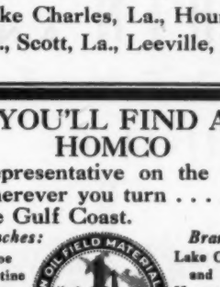
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Among Gulf Coast Drilling Contractors

Rutherford Drilling Co., Houston, is rigging up at Van Vleck, near Bay City, Matagorda County, to drill a 7,000-foot test for the Skelly Oil Co. Lee McGahey is pushing tools. This test is located about 2,000 feet from the discovery well in this area, also drilled by the Rutherford Drilling Co. The discovery well is shut in at present, standing with approximately 2,700 pounds of pressure on casing and tubing. Rutherford Drilling Co. also has one rig running for Brown & Wheeler at Conroe, Tex.

The Rowan Drilling Co., Houston, has moved a second rig into the Cayuga Field, where it will drill a test for the Tide Water Oil Corp. Roy Scott is pushing tools.

DeArman Brothers Drilling Co. has started up on a test for Smith & Hamill on a one-acre lease in the Pierce Junction Field.

Edwards Drilling Co. has spudded in on a test for the Woodleigh Petroleum Co. about 20 miles west of the Bosco Field, Acadia Parish, Louisiana. Superior Oil Co. of California, Pure Oil Co., Woodleigh Petroleum Co. and Edwards Drilling Co. are jointly interested. In East Texas the company has started up a rig for the Humble Oil & Refining Co. On a 205-acre lease of its own in the Big Creek Field, Fort Bend County, Texas, the company has just completed a well at 3,100 feet which is flowing at the rate of 110 bbls. a day, and still making considerable drilling mud. The well is expected to be one of the best in the field when it finally cleans itself.

C. & C. Drilling Co. is rigging up for a wildcat test 3 miles from East Columbia on the Brazos River, for E. N. Holt and others of Omaha, Neb. This will be known as No. 1 Griffith. Another rig is running at Vanderbilt, Jackson County, for the Encino Gas Co. A third rig is starting up at Livingston, Polk County, on No. 5 Davis-Holmes for the Gem Oil Co.

W. V. (Bill) Bowles is preparing to drill a test for the Continental Oil Co. at Citrus Grove, Matagorda County. This is located in an area where heaving shale has given considerable trouble in the past, and it is reported that cable tools will be tested as a means of making hole through this formation, if encountered.

Jess Fowler is rigging up to drill a test for J. E. Seiber, trustee, at Boling, Wharton County, Texas. Location will be known as No. 1 J. R. Farmer.

Carl B. King Drilling Co. is rigging up on a location for the Sinclair-Prairie Oil Co. at Jal, N. Mex. The same company is moving in a rig to drill a test for the Phillips Petroleum Co. in the same field. In East Texas, the company is preparing to drill a test for the Dyck Oil Co. and another for Regent Oil Co.

Smith & McDannald are starting a new hole for the Stanolind Oil & Gas Co. at Greta, Tex. Another rig is starting up in the London district, Rusk County, for the Tide Water Oil Co. A third rig is moving in to the Cayuga Field for the Tide Water Oil Co., and a fourth is scheduled to start up at Louise for the Pure Oil Co. This makes Smith & McDannald's second rig for the Pure Oil Co. at Louise.

George Echols has six rigs running at this time, two in Starr County, Guerra Field, for the Sun Oil Co.; one near San Diego for the Sun Co.; one at Greta for the Stanolind Oil & Gas Co.; one at Greta for the Humble Oil & Refining Co., and one at Odom for the Circle-W Oil Co.

Alamo Drilling Co. is drilling on No. 1 Smith in the Odom district, San Patricio County.

Gholson Drilling Co. has one rig running in the Cayuga area on Janeson & Bryson's No. 1 Brice, in which the company is interested.

Rowan Drilling Co. has moved a second rig into the Cayuga Field for the Tide Water Oil Co.

W. V. Bowles, formerly South Texas division superintendent of the Texas Co., which is now in the contracting business, has two rigs running for the Texas Co., one at Tomball, and one in the Government Wells Field.

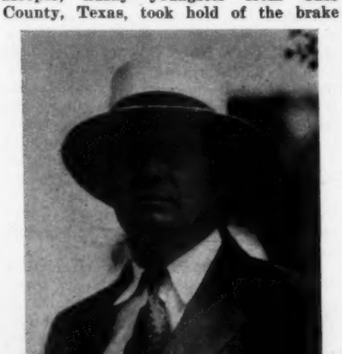
Jess Fowler is drilling a well for the Gasol Production Co. at Hull.

Carl Short has two rigs running for the Pure Oil Co. at Louise, Tex., and one running for the Amerada near Dilley, Tex.

Ben (Bud) Coyle, one of the Gulf Coast's oldest contractors, is drilling a test at Leesville, Bayou La Fourche, Louisiana, for Cockrell and others. He is also moving a rig into southwest Beauregard Parish, Louisiana, for a wildcat test for the Federal Petroleum Co., which is the Louisiana division of the Republic Production Co., of Houston, Tex.

J. E. Hooper Is Back in the Contracting Business

In 1908, when grip rings and single barrel engines were still standard equipment on rotary rigs, and 1,500-foot holes were considered deep, J. E. (Jeff) Hooper, husky youngster from Cass County, Texas, took hold of the brake



J. E. HOOPER

for the first time. Jeff was then working as a member of a crew drilling a wildcat in North Louisiana.

In the next nine years, until 1917, he followed the rig-running profession up and down the Gulf Coast, learning in the school of experience the many and varied problems involved in drilling wells in this area. In 1917 he assembled some tools of his own and entered the contracting business, in which he remained until 1920. In that year he succumbed to the lure of a job as superintendent for the Sinclair Oil & Gas Co. at Damon Mound, a job he held until 1923 when he was named general superintendent of the company's drilling and producing operations in the Gulf Coast. This position he retained until about a year ago.

Several months ago, Jeff again assembled some tools of his own, and re-entered the contracting business. Recently he completed his first well on a Pure Oil Co. block on the Canada-Smith ranch, 15 miles south of Anahuac.

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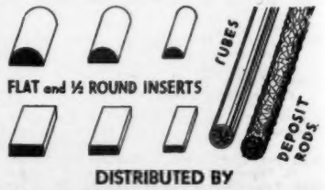

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Wildcat Producer in Lapeer County, Michigan; Two Montcalm County Wells Increase Flow

By PAUL A. ELLIOTT
Staff Correspondent, Michigan Fields

MUSKEGON, Mich., June 4.—A new southeastern Michigan wildcat well in Lapeer County, making commercial production in the Berea formation, another wildcat show of oil and gas in the Dundee in Saginaw County, development of record upper Traverse production in two Montcalm County wells and completion of eight new Porter Township producers aggregating more than 6,300 bbls. a day featured the week in Michigan fields.

An estimated initial of 50 to 75 bbls. a day was formed in William C. Sowell's No. 1 Max and Ann Kohler, NW SE SW Section 4-8n-9e, Oregon Township, Lapeer County. Berea sands were topped at 1,408 feet and drilled 2 feet in. Berea was topped 4 feet higher than in one of George H. Flynn's recent Oregon-Lapeer tests half a mile southwest. Lee S. Miller, Detroit geologist, located the well. Possibilities are seen in four other lower formations in this section: Upper Traverse at about 2,000 feet, Dundee at 2,500 feet, Monroe at 2,650 feet and Trenton at 3,250 feet.

Berea Oil Co.'s No. 1 Brannick is the only other well now drilling in this vicinity, although several new tests are projected. Larry T. Mytinger, of Flint, is moving in for No. 1 Olney well, 1½ miles east of the Kohler well, while Fred Craft, formerly of Canada, is moving on location in NE NE Section 10, Oregon Township. Stoddard and Darke of Detroit hold the lease on 120 acres a short distance northwest of the Kohler well which they probably will drill soon. George Flynn and associates are planning another location on the Brannick farm southwest of the Kohler well.

Montcalm County

New potentials on Daily Crude Oil Co.'s Nos. 1 and 2 Christensen heirs wells in Section 10-12n-6w, Home Township, Montcalm County, revealed an open flow capacity of more than 1,000 bbls. a day, making them the largest upper Traverse producers yet struck in Michigan with the exception of one Ogemaw County well estimated good for more than 2,000 bbls. but quickly declined in flow. No. 1 Christensen, NW NW NE Section 10, discovery well, was rated at 1,022 bbls. a day based on its third hour open flow, while No. 2 Christensen, east offset to No. 1, made 1,029 bbls. a day under a similar test.

Originally No. 1 made only 120 bbls. a day but its flow was boosted above the 1,000-bbl. mark by acid treatment. Similar results were obtained in No. 2 increased from an initial of 117 bbls. a day to 1,029 bbls. a day after acid treatment. Upper Traverse pay sand in this territory where considerable new drilling projects are starting, is encountered at 3,160 feet. Rock pressure dropped from 830 to 490 pounds in No. 1 and from 950 to 480 pounds in No. 2 during the three-hour test. Montcalm crude has the highest gravity of any Michigan product to date testing about 46 gravity.

Porter Township

Of the eight new producers in Porter Township, Midland County, Pure Oil Co. completed four making an aggregate of about 6,000 bbls. Four other small wells added about 300 bbls. Several of the new producers were slight extensions. The largest well was Pure Oil Co.'s No. 8 Walter Neitzke, NW NW SE Section 21-13n-1w, rated at 2,500 bbls. when it made 221 bbls. in two hours from the Dundee at a total depth of 3,426 feet. The second largest was Pure's No. 1 C. D. Alexander, NW SE SE Sectiion 18, given a potential rating of about 2,000 bbls. when brought in at 3,406 feet, 32 feet in the Dundee. It was the first well on an "island" virtually surrounded by the Pine River curving through the field.

Pure also brought in the first producer in Section 14, Porter Township, in its No. 1 James M. Hicks, SW SW SW Section 14, which made about 1,000 bbls. a day after topping the Dundee at 3,359 feet. No. 1 Hicks will force the drilling of three offsets, Pure's No. 1 Howland in Section 22 and Fred Turner's Nos. 3 and 4 Baxter, also Section 22. Pure's No. 4 A. J. Neitzke, SE NW SE Section 21, was good for about 500 bbls. a day at 3,440 feet. It flowed 251 bbls. in 12 hours.

Gordon Oil Co. and Columbia Oil & Gas Co.'s No. 2 Minnie Hale, NE SW SW Section 21, topped the Dundee at 3,379 feet and was drilled to a total depth of 3,426 feet making 175 bbls. initial. C. W. Teater's No. 8 Joseph M. Wale, SW NW NW Section 22, will make about 75 bbls. a day in the Dundee topped at 3,353 feet with pay encountered at 3,375-86 feet and the hole bottomed at 3,405 feet, or 49 feet in.

Richard Hall's No. 1 Harris-Bond, SE NW SE Section 7, struck oil at 3,424 feet after topping the Dundee at 3,404 feet about a quarter mile north and east of production. Water also was struck with the oil which filled up the hole but failed to flow. An attempt will be made to shut off the water. J. S. Braden's No. 2 William McCallum, SE SE SE Section 20, made about 50 bbls. initial on a location north of a dry hole. Dundee was topped at 3,390 feet and drilling suspended at 3,443 feet.

White Star Refining Co.'s No. 1 State Bank, Section 26, Birch Run Township, Saginaw County, had a show of oil and gas in the Dundee but was drilling deeper.

New Locations

Four permits were issued: F. Irwin Bryan and Harry T. Martin's No. 1 Virgil V. and Mina I. Sheets, NW SE NW Section 35-13n-7w, Milbrook Township, Mecosta County; Oil States Corp. and J. W. McIntosh's No. 1 G. E. Shaffer, NE SW SE Section 18-20n-5e, Mason Township, Arenac County; J. S. Braden's No. 3 J. T. and Hazel M. McCallum, NW SE SE Section 20-13n-1w, Porter Township, Midland County, and Taggart Brothers, Inc.'s No. 7 J. M. McKeough, C SW Section 2-14n-9w, Austin Township, Mecosta County.

Garfield Oil & Gas Co.'s No. 1 White, Section 24, on the east edge of the proved Vernon Township Pool, failed to produce in the Dundee and will be abandoned at 3,805 feet.

Two wells are near completion in the Michigan sands in the Broomfield Township gas pool while Jasmid Oil Co.'s No. 1 Pietscher, a wildcat in Section 28, Jasper Township, is nearing the Dundee.

Lima and Central Ohio Fields Showing Improvement in Development Work

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

FINDLAY, Ohio, June 4.—The Central West Fields show a nice improvement in development work, especially in the Lima and Central Ohio fields; other divisions still are quiet but no doubt will soon get busy. In the Lima Field, Sandusky County, George Keyser's test on the L. Gerwin farm, Section 3, Woodville Township, is dry in the Trenton lime at 1,238 feet. W. F. Montgomery's No. 2 on the N. F. Hetrick farm, NE Section 31, Rice Township, same county, was dry at a total depth of 2,486 feet; it drilled through the Trenton lime and tested the Clinton lime below.

In Van Wert County, Hystanton Oil & Gas Co.'s No. 1 on the Eli Stewart farm, NE Section 30, Jackson Township, produced an initial of 30 bbls. from the Trenton at 1,242-74 feet.

In Wyandot County, Jones & Coyle's No. 1 Harry Bardon farm, Section 5, Crane Township, was dry at 1,670 feet. Upper Sandusky Oil & Gas Co. made a location for No. 8 O. J. Weiker farm, Section 28, same township. In Pitt Township, same county, Wood and others have a rig on the Edward Orton farm, Section 22.

In Hardin County, Ohio Fuel Gas Co. is drilling No. 1-5,814 on the E. V. Jones farm, Section 8, Pleasant Township.

In Wood County, Donald Oil & Gas Co. abandoned No. 1 Levi Brobst farm, Section 16, Henry Township. Same company abandoned Nos. 3, 4, 6, 7, 8 and 12 Bloom heirs farm, same section, and No. 4 Martha A. Bloom and 6 and 7 E. L. Swope farm, same township.

In Hancock County the Ohio Oil Co. abandoned No. 9 P. Alexander farm, and Nos. 3 and 10 Joseph Crites farm, Section 35, Allen Township. Willard, George and others are drilling No. 1 George Jones farm, Section 4, Blanchard Township.

CENTRAL OHIO

Seventeen completions were reported from the Central Ohio Field, six oil wells with an initial of 118 bbls., six dry holes and five gas wells.

In Belmont County A. C. Porters & Co.'s No. 1 Danford-McFetridge farm, Lots 3 and 4, Wayne Township, was dry at 2,008 feet. O. K. Oil & Gas Co.'s No. 1 State School Land, NW Section 26, Richland Township, is a gas well at 1,141 feet, and No. 2, same state school land, is a gas well at 1,868 feet. Union Gasoline & Oil Co.'s No. 1 Gustave Hall farm, SW Section 20, same township, was dry at 1,776 feet.

In Medina County Edson & Son's No. 35 E. G. Miller farm, Lot 13, Chatham Township, produced an initial of 30 bbls. at 486 feet. Same company's No. 46 Miller farm, Lot 12, same township, had an initial of 25 bbls. O. K. Oil & Gas Co.'s No. 42 Jess McVickers farm, Lot 2, same township, produced 20 bbls. at 492 feet, and Curtis & Eaken's No. 10 Harriett Broadsword farm, Lot 12, same township, produced 2 bbls. at 397 feet. Ohio Fuel Gas Co. is drilling No. 1 Edward C. Herr farm, Lot 1, same township, and No. 1 on Lena E. Myers farm, Lot 22, Lafayette Township, same county, and some new locations are reported to have been set. Edson Sons Co.'s No. 46 Miller farm, Lot 12, produced 25 bbls. initial at 436 feet.

In Lorain County the Ohio Fuel Gas Co.'s No. 1-5,794, John Tomes farm, Lot 67, Columbia Township, reported an initial of 25 bbls. at 2,691 feet. Wittmer Oil & Gas Co.'s No. 1 Thomas B. Foley farm, Lot 38, Grafton Township, was dry at 2,562 feet. Wiser Oil Co. is drilling on the Edward T. Squires farm, Lot 12, Carlisle Township. Ohio Fuel Gas Co. has a location made for No. 1-5,827 on the Helen S. Osborn farm, Lot 49, Eaton Township.

In Wayne County, Robinson & Arn's test on the Phillip Wile farm, Section 11, Plain Township, was dry.

In Fairfield County, City Natural Gas Works has a rig in for No. 3 on the J. J. Shaw farm, Section 14, Pleasants Township.

In Knox County, Upham Gas Co. has a rig in for No. 1 George Swingle farm, Section 12, Jefferson Township. Pure Oil Co. is drilling No. 1 J. J. Strickler farm, Section 1, Jackson Township. Riley and others are drilling No .2 Joseph Breece farm, Lot 6, Pleasants Township.

In Coshocton County, Pure Oil Co. is drilling No. 3 Roy Hayes farm, Section 5, Perry Township.

In Licking County, E. J. Edman is drilling No. 3 Thomas Smith farm, Section 1, Franklin Township. Whitehill Oil Co. has a location for No. 20 Alice Ashcraft farm, Perry Township.

In Athens County Ohio Fuel Gas Co. made four locations in Lodi Township on the George W. Fulton farm, and Atwood Grim farm, Section 31, No. 3 Frank Sargent farm, Section 6, and on the Irene Douglass farm, Section 18.

In Stark County, East Ohio Gas Co.'s

(Continued on Page 77)

ATLANTIC WATER TERMINAL

NEW YORK, June 2.—The Atlantic Refining Co. has acquired 35 acres of land on the waterfront at the port of Albany on the New York state canal and will build a large water terminal to serve its marketing facilities in that part of New York State.

It is understood that the company expects to spend $500,000 at the terminal. A 460-foot permanent dock is to be built with large storage facilities for all grades of petroleum products which will be brought to the terminal from the Philadelphia refinery of the company. The site adjoins the terminals of the Sun Oil Co. and Shell Eastern Petroleum Products Co.

IKE N. ADAMS DIES

HOUSTON, Tex., June 4.—Ike N. Adams, superintendent of fields for the Houston Pipe Line Co. since the beginning of the company in June, 1925, died at Beeville May 19. Mr. Adams was born at St. Mary's, W. Va., July 11, 1887. He has been identified with oil and gas pipe line enterprises since he was 18 years old.

Gilmer County, W. Va., Well Flows 750 Barrels; Result of Drilling Deeper an Old Gas Well

By STAFF CORRESPONDENT

PITTSBURGH, Pa., June 4.—Among the several fair wells completed in the lower eastern fields during the week, the outstanding one was the old Salt sand gas well in Center district, Gilmer County, West Virginia, which was drilled down by the owner, Godfrey L. Cabot, Inc., in the Berea sand. As soon as the Berea was struck, the well started to flow at the rate of 50 bbls. an hour and produced about 750 bbls. the first day. It is on the A. H. Blackshire farm in the Glenville quadrangle about 1,000 feet from the producer of the Hope Construction & Refining Co. on the Mary A. Stump farm.

This is the third well resulting from drilling deeper old gas wells into the Berea sand and is the largest of the three. The other two made a showing for over 100 bbls. a day each. In this district at the present time, McCall and others are rigging up on the E. G. Rhorbaugh farm. Godfrey L. Cabot, Inc., is testing the sand at 1,630 feet in preparing to drill old No. 2 on the J. P. Norman farm to the Berea. Mountain Iron & Supply Co. is down 2,025 feet in drilling deeper old No. 3 on the A. H. Stump farm. Hope Construction & Refining Co. is down 2,186 feet in No. 3,569 on the Mary A. Stump farm and is building a rig for No. 5,894 on the A. H. Blackshire farm.

There were 16 completions and one dry hole in the lower eastern fields during the week. Nine of these were producers with an initial production of 1,127 bbls. and 7 were gas wells. Except for the large well in West Virginia, and one fair producer in Southwest Pennsylvania, the remainder of the new production was reported from Southeast Ohio, where there were three fair wells.

SOUTHEAST OHIO

In Coshocton County, Pure Oil Co. completed No. 3 on the Ray Hays farm in Section 5, Perry Township, in the Clinton sand at 3,240 feet. It produced 115 bbls. the first day after shot.

In Guernsey County, Ohio Producing & Refining Co. completed a test on the joint line of the James and Retta Gadd and Lizzie Little farms in Section 1, Wheeling Township. It was drilled in the Niagara lime at a depth of 3,697 feet and with the tools 10 feet in that formation produced 40 bbls. the first day, natural.

In Licking County, E. C. Wright, trustee, completed a second test on the J. N. Freese heirs farm in Section 14, Fallsbury Township, in the Clinton sand at a depth of 3,000 feet. It produced 93 bbls. the first day after shot.

WEST VIRGINIA

There were four additional producers completed in West Virginia during the week. In Pleasants County, on Rouse Run in McKim district, Adam Ward and others completed No. 19, 3 feet in the Maxon sand on the G. W. Varner farm. The hole filled up 300 feet in the casing immediately and it is estimated good for 25 bbls. a day, natural. In Jefferson district, M. C. Martin completed a test on the R. G. W. Campbell farm in the upturn of the Injun sand at 400 feet. It is showing for a half barrel pumper.

In Roane County, Reedy Oil & Gas Corp. completed a test on the G. A. Knopp farm in Curtis district in the Salt sand at a depth of 1,772 feet. It is good for about 3 bbls. a day. On West Fork River in Spencer district, Oil City Trust Co. completed No. 16 on the B. C. Tucker farm in the Salt sand, showing for 4 bbls. a day.

Reconditioning work is still in progress. On Miracle Run in Battelle district, Monongalia County, Union Gasoline & Oil Corp. cleaned out and shot No. 1 on the Simon P. Yost farm, an old Fourth sand gas well, and it will make a producer good for about 2 bbls. a day.

Gas Wells

In Cabell County, West Virginia Gas Co. completed a test on the George Pruett lease in McComas district in the Brown shale at a depth of 3,471 feet, showing for a small gas well.

In Pleasants County, Mackey Oil & Gas Co. completed a test on the E. C. Owens farm on Rock Run in Lafayette district in the Big Injun sand. It is showing for about 40,000 feet of gas a day and about a half barrel of oil. In McKim district, Ross Bonar completed a test on the D. J. Locke farm in the Salt sand and has a light gas well. The location is along Big Painter Creek.

In Ritchie County, on Leather Bark Creek in Murphy district, W. H. Bickle completed a fair second test on the U. S. Fluharty lease. It was drilled in the Injun sand, a total depth of 1,892 feet, and it is showing for 750,000 feet along with about 4 bbls. of oil a day. In Clay district, Locke-Simonton drilled deeper the test on the W. J. Wince farm to a total depth of 2,035 feet. There is a showing of 235,000 feet of gas a day in the Keener sand. In Grant district, John Leeton and others completed a test on the David Gray heirs farm in the Big Injun sand at a depth of 2,051 feet. The lower depths were dry but there is about 116,000 feet of gas a day in the Salt sand.

In Grant district, Ritchie County, Doctor Conley drilled a test on the T. E. and A. F. Dye farm through the Big Injun sand to a total depth of 1,909 feet. It proved to be a dry hole.

Drilling in West Virginia

In Boone County, Pure Oil Co. is grading a road to a location for a second test on the LaFollette, Robson and Prichard tract C in Sherman district. The same company has made a location for a second test on the A. M. Prichard farm, same district. Its No. 66 on the Federal Coal Co. tract is drilling at 2,195 feet and No. 67 at 499 feet. It also has part of the material on the ground for No. 68. In this district, Godfrey L. Cabot, Inc., is spudding in No. 3 on the J. Q. Dickinson lease and drilling at 1,965 feet No. 53 on his lease of the Federal Coal Co. property. His No. 3 on the Central Trust Co. lease, in this district, is being rigged up. In Washington district, Godfrey L. Cabot, Inc., is drilling at 1,270 feet on the Henry Keadle farm and 1,035 feet on the Sidney White farm. In this district, Pond Fork Oil & Gas Co. is down 1,500 feet on the Cole and Crane lease, No. 17.

In Cabell County, Guyandotte district, Graham Gas Co. shut down at 2,705 feet for a shot in its test on the Frank Marchetti lease. Three other wells in this district are active: United Fuel Gas Co., drilling at 1,800 feet on the J. W. Starkey farm; May Gas Co., at 2,730 feet on the G. I. Neal farm, a test; and Leonard Paugh, at 1,600 feet on the Leonard Paugh farm, a test. In McComas district, Madison Gas Co. is down 1,494 feet on the Wade H. Holton farm.

In Calhoun County, Cain and Rothwell have made a location on the T. Hale Knight farm in Sheridan district. Richter Oil Co. has made a location for No. 5 on the Z. O. Cooper farm. In Washington district, Harley Jarvis and others have made a location on the Lydia White farm. In Center district, Starcher and Richards are rigging up on the James Wilson farm, a test. In Sherman district, R. Fowler and others are drilling at 1,800 feet in a second test on the Lafayette Stump farm. Carnegie Natural Gas Co. has been issued a permit for No. 1,485 on the R. F. Bennett farm. H. B. Scott has the material on the ground for a test on the P. Fling heirs farm. In Lee district, Jarvis and Ayers are hauling in the material on the Roanna Robinson farm. In Washington district, Eastern State Gas Co. is drilling at 1,150 feet on the A. J. Boggs farm, a test.

In Kanawha County, Godfrey L. Cabot, Inc., is building a rig for No. 7 on the Campbells Creek Coal Co. tract and is drilling at 1,736 feet in No. 6, both in Malden district. This operator has a road completed to a location to No. 6 on the W. P. Tomkins farm. In Cabin Creek district, the same operator is down 1,352 feet in No. 43 on the A. D. Huntington lease, and 605 feet in No. 44 and building a rig for No. 45 with two additional locations cleared. Pure Oil Co. has a rig standing for No. 254 on the Williams Coal Co. tract and material on the ground for No. 255.

In Ritchie County, Ward F. Kieffer and others have a permit on the R. P. Swisher farm in Grant district. Gillman and others have a rig standing on the Stephen Gillman farm. Smith and Anderson have started drilling a second well on the Thomas Maloy farm. Petroleum Producing Co. is down 730 feet on the Jennie Carroll farm, a test. In Murphy district, Everett Starcher and others have a rig on the Daniel Wilson farm.

In Lost Run Pool, Clay district, Ritchie County, Glenn F. McBurney and others have made a location for a second test on the Hugh Ball farm 900 feet south of their No. 1. Richards Farm Oil Co. is drilling No. 6 on the Frank R. Ball farm. Howard Robinson is drilling at 1,710 feet on the W. M. Flannigan farm. Robert E. Elder has rigged up on the J. W. Leonard farm. F. A. Deem and others has a permit on the S. C. Robinson farm.

In Tyler County, Albert Neeley has a permit on the Sherman Smith farm in Meade district. In Wirt County, Daubenspeck and Mason have a location on the G. Nelly farm in Burning Springs district and Southern Oil Co. for No. 21 on the Morris Richter heirs farm. In Wood County, John Leeton and others have reached 1,000 feet in No. 5 on the John Coplin farm in Walker district.

In Marshall County, Manufacturers Light & Heat Co. is down 1,210 feet on the J. C. Clouster farm in Liberty district and in Proctor district, Wetzel County, G. N. Yoho and others are drilling at 1,830 feet on the J. W. Monroe farm, a test. In Harrison County, Raad and Moses are moving in the tools for a second test on the A. P. W. Flannigan farm in Ten Mile district.

In Roane County, Law and Leeton have rigged up on the O. M. Tatterson farm in Reedy district. In Smithfield district, R. L. McCulty and others are drilling at 1,200 feet on the O. M. Young farm. Charles Despard has made a location for a second test on his own farm. In Spencer district, J. D. Silcott has started drilling on the John B. Lukens farm and O. G. Epling has a rig on the L. P. Starr farm.

George Rossman, East Texas representative, Kilgore, Texas, and Fred Parks, Texas manager, Dallas, both with Bridgeport Machine Company

SOUTHWEST PENNSYLVANIA

There were two wells completed in Southwest Pensylvania during the week, one a fair producer. In South Franklin Township, Washington County, Carnegie Natural Gas Co. drilled a light gas well on the Alberta Iams farm to the Fifth sand, the top of which was at 2,906 feet. There was a showing of oil at 2,907 feet and a flow of oil at 2,912-14 feet. The well started making about 12 bbls. an hour and as soon as the first head was off, the tools were started to the second Fifth sand pay about 14 feet deeper. The well is now drilling at 2,920 feet.

In Greene County, about 2 miles south of Majorsville in Richhill Township, Glass and Hagerson drilled deeper their No. 1 on the Jacob Raymer farm and completed it in the Injun sand at 1,518 feet. It is a gas well gauging about 220,000 feet a day.

In Amwell Township, Philadelphia Oil Co. is setting two packers shutting off the Gantz sand gas at 2,634 feet and will drill to the Fifth sand or the oil producing formation. It is on the Hulda Jenkins farm. No. 2 on this farm is drilling at 1,925 feet. In this township, Carnegie Natural Gas Co. is spudding on the N. B. Redd farm in oil territory. Union Gasoline & Oil Co. is drilling at 1,480 feet on the Mary B. Lindley No. 2. Raymond Orrill & Co. have reached 1,340 feet in No. 4 on the G. L. Walker farm.

In East Findley Township, Meyers Hoskinson and others are drilling at 1,976 feet in No. 2 on the narrow J. N. Clutter strip. Union Gasoline & Oil Corp. is down 900 feet in an offset well to J. N. Clutter's No. 1 which is making about 70 bbls. a day. Its No. 4 on the Clutter farm, offsetting Myers Hoskinson's No. 2, is drilling at 890 feet. On the Leroy Ealy farm, Natural Gas Co. of West Virginia is drilling at 2,070 feet and on the William Bedillion farm at 725 feet. Levier and others reached the Gordon Stray sand at 2,590 feet on the James Marshall and shut down testing although the formation now gives the appearance of being dry in which case the test will be drilled to the Fifth sand.

In South Franklin Township, E. H. and J. B. Tague are drilling at 500 feet in No. 10 on the Adaline D. McKennan estate and are ready to start No. 11. Furman Nuss and others are still fishing the bit on the Jason Buchannon farm.

In Greene County, 1¼ miles north of Ryerson Station in Richhill Township, Wasmuth and Callahan are drilling at 500 feet on the F. W. Baldwin farm.

Drilling Operations in California Increasing With Operators Optimistic Regarding Outlook

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., June 4.—Stabilization of the marketing structure and more stringent curtailment of production seems to be about all that California needs in the way of encouragement as exploration work in prospective areas and development work in proven fields is substantially above the low mark chalked up last year and with any kind of a break drilling operations will continue at a relatively high level. As soon as the present uncertainty is removed, operators will take a new lease on life and proceed with normal development and this will likewise stimulate wildcat exploration. There is enough undeveloped proved acreage and undrilled lower zones to sustain an aggressive drilling program for the rest of the current year and well into 1935 but operators are holding off for the simple reason that they do not know whether the future price of crude oil will permit economic development. In addition to this new drilling, there is a considerable amount of remedial work waiting for tangible favorable indications. The outlook right now is exceptionally promising.

In order to substantiate the belief that additional development can be expected as soon as stabilization is achieved it might not be amiss to call attention to the progressive increase in drilling operations which has taken place during the past several months. In January, 1934, there were 161 active drilling wells in California but this figure moved up to 180 in February and further increased to 183 in March and 187 in April. In January last year there were only 98 wells drilling and 104 strings of tools in operation during April. At the close of 1933, operators were working on 137 uncompleted drilling projects.

Exploration Increasing

Wildcat operations in California extend all the way from the Mexican border to Sutter, Tehama and Yolo Counties in the north. The Union Oil Co. is drilling two wildcats in areas that show unusual promise. The Standard is centering its activities in the McKittrick sector and the Shell is prospecting in the Gould Hills area of Kern County. The Associated recently suspended drilling operations on a deep test at Lost Hills and has not yet undertaken any new work. The Texas Co. has tentatively located a test in Section 1-21-14, due west of the southern tip of the Coalinga Field in Fresno County.

The Union Oil Co. has spudded in a wildcat southwest of the East Coyote Field of Los Angeles Basin. Reconnaissance work indicates that the structure is a normal anticline with almost perfect closure. In the Rosecrans area, the Woodward Oil Co. is putting the finishing touches on the rig for a new test to be drilled on the Scher property in Section 12-3-14. If this wildcat gets production it will either open up a new field between the Potrero and Rosecrans Fields or extend the northwestern limits of the latter. Several tests have previously been drilled in this general area but all of them were dusters.

There are a number of interesting tests under way in the San Joaquin Basin at the present time but few of them have reached the critical depth. Out on the McKittrick front the Standard is nearing the 3,000-foot level in No. 45, a wildcat in Section 15-30-22, but nothing of interest has been logged to date due to the shallow depth. If geological conditions are favorable, this wildcat will be carried on down into the Temblor which has been found so highly productive at Kettleman Hills and North Belridge. The Western Gulf's test, No. 1 S. P., in Fresno County in Section 15-17-15, does not look especially hot at 8,700 feet, although its status might change over night. A few months ago this wildcat showed some promise but a series of production tests failed to result in commercial production. Going a little farther north, the Pure Oil Co. is rotating at 2,700 feet in its Chowchilla wildcat in Madera County, while still farther north in San Joaquin County the Milham Exploration Co. has reached a depth of 4,575 feet in No. 1 Connolly which is being drilled primarily to determine the possibility of developing commercial gas production.

In the coastal region, comprising Ventura, Santa Barbara and San Luis Obispo Counties, prospectors are quite active. In the Santa Maria district, the Union is rigging up rotary drilling equipment on No. 1 Moretti. This will be a shallow test and hence its importance should be determined within 30 days. In San Luis Obispo County, the Farrel Petroleum Co. is making normal footage in a test under way in Section 18-31-21. Near Goleta, in Santa Barbara County, Hastain & Stone are drilling ahead in brown shale at 2,650 feet in a test in Section 9-4-28.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	May 20		May 13			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Fuel oil	468,913	66,988	167,356	23,908	6,181,514	663,669
Diesel and gas oil	.....	.....	.....	.....	931,159	1,985,064
Gasoline	116,792	16,685	225,949	32,278	2,510,407	3,162,528
Kerosene	49,526	7,075	.....	.....	552,406	411,076
Other finished oil	.....	.....	.....	.....	15,171	42,814
Other unfinished oil	.....	.....	.....	.....	.....	72,584
Foreign exports—						
Crude oil	365,630	52,233	117,568	16,795	3,167,630	2,913,001
Fuel oil	471,980	67,426	222,126	31,732	5,103,943	2,801,216
Diesel and gas oil	.....	.....	157,385	22,484	1,713,861	1,400,047
Gasoline	82,494	11,785	181,577	25,940	1,696,108	2,459,074
Kerosene	116,334	16,619	72,550	10,364	774,399	793,326
Other finished oil	.....	.....	.....	.....	3,529	.....
Other unfinished oil	.....	.....	.....	.....	127,271	34,547
Coastwise-domestic						
Crude oil	219,177	31,311	210,473	30,068	4,145,360	4,199,939
Fuel oil	188,503	26,929	64,408	9,201	4,373,103	3,892,775
Diesel and gas oil	30,172	4,310	1,391	199	349,134	555,802
Gasoline	301,296	43,042	64,468	9,210	4,442,539	4,832,232
Kerosene	10,004	1,429	.....	.....	74,418	82,198
Naphtha distillates	.....	.....	.....	.....	.....	27,651

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Fuel oil	.....	.....	.....	.....	49,995	.....
Diesel and gas oil	.....	.....	.....	.....	448,113	289,531
Gasoline	.....	.....	.....	.....	72,625	488,791
Kerosene	.....	.....	.....	.....	197,498	482,430
Lubricants	.....	.....	.....	.....	18,331	16,400
Foreign exports—						
Crude oil	70,750	10,107	.....	.....	737,212	657,647
Fuel oil	222,789	31,827	16,115	2,302	664,391	252,511
Diesel and gas oil	81,943	11,706	.....	.....	662,079	492,179
Gasoline	111,301	15,900	.....	.....	1,380,224	1,699,388
Kerosene	45,725	6,532	.....	.....	348,497	389,233
Lubricants	9,815	1,402	.....	.....	72,395	64,556
Other finished oil	.....	.....	.....	.....	2,760	3,745
Other unfinished oil	.....	.....	.....	.....	5,750	19,166
Coastwise-domestic						
Fuel oil	153,976	21,997	77,631	11,090	1,556,587	1,251,691
Diesel and gas oil	8,342	1,192	.....	.....	95,371	166,162
Gasoline	59,807	8,544	67,188	9,598	1,552,669	1,339,623
Kerosene	3,422	489	.....	.....	48,112	57,531

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well, location—	S.T.R.	Depth	Status:
Vance Dev. Co., No. 1 Artesia, Los Angeles Co.	25- 3-12	mtl.	bldg. rig.
Woodward Oil Co., No. 1 Athens, Los Angeles Co.	12- 3-14	mtl.	bldg. rig.
Clark & Miller, No. 1 Hermosa, Los Angeles Co.	31- 3-14	rig	rigging up
Dominguez Oil Co., No. 1 Dominguez, Los Angeles Co.	34- 3-13	4,770	redrilling
Quinn, J. B., No. 1 Dominguez, Los Angeles Co.	3- 4-13	4,587	cleaning out
Nudson, T. T., No. 1 Inglewood, Los Angeles Co.	17- 2-14	2,940	plug bottom
Scientia Oil Co., No. 1 Inglewood, Los Angeles Co.	7- 2-14	rig	rigging up
Standard Oil Co., No. 1 Inglewood Deep, Los Angeles Co.	7- 2-14	2,631	cemented
Pacific Western, No. 1 Inglewood Deep, Los Angeles Co.	8- 2-14	2,539	cemented
Plymouth Oil Co., No. 1 Inglewood, Los Angeles Co.	8- 2-14	3,231	sd. sh. drilling
Wilshire, No. 2 Potrero Deep, Los Angeles Co.	27- 2-14	7,073	sd. sh. drilling
Community Oil Co., No. 1 Montebello, Los Angeles Co.	34- 1-11	7,447	suspended
Universal Consd., No. 1 Montebello Deep, Los Angeles Co.	5- 2-11	7,505	plug 7,060
Universal Consd., No. 2 Montebello Deep, Los Angeles Co.	5- 2-11	6,950	suspended
Universal Consd., No. 3 Montebello Deep, Los Angeles Co.	5- 2-11	7,680	suspended
Texas Co., No. 1 Montebello Deep, Los Angeles Co.	6- 2-11	6,943	O.S. cmtd.
Standard, No. 1 Montebello Deep, Los Angeles Co.	6- 2-11	4,808	reaming
St. Helens, No. 1 Montebello Deep, Los Angeles Co.	6- 2-11	3,208	sd. sh. drilling
Fullerton Oil Co., No. 1 Montebello Deep, Los Angeles Co.	6- 2-11	rig	rigging up
Frontier Oil Co., No. 1 Pico, Los Angeles Co.	7- 2-11	1,500	cemented
Midfield Oil Co., No. 1 Pico, Los Angeles Co.	19- 2-11	4,817	suspended
Barstow Oil Co., No. 1 Saugus, Los Angeles Co.	35- 5-16	2,136	suspended
Barstow Oil Co., No. 2 Saugus, Los Angeles Co.	35- 5-16	....	material
International Dev. Co., No. 1 Saugus, Los Angeles Co.	34- 5-16	1,281	sd. sh. drilling
B. & L. Drlg. Co., No. 1 Newhall, Los Angeles Co.	14- 3-16	....	location
Black Eagle Oil Co., No. 1 Huntington, Orange Co.	tideland	3,985	redrilling
Nuoil Co., No. 1 Newport, Orange Co.	29- 6-10	6,455	prod. test
Explorers Oil Co., No. 1 Fairview, Orange Co.	9- 6-10	904	cleaning out
Speik Oil Co., No. 1 Fairview, Orange Co.	9- 6-10	1,102	suspended
Placentia Dev. Co., No. 1 Placentia, Orange Co.	31- 3- 9	4,531	redrilling
Mid-Rich Drlg. Co., No. 1 Atwood, Orange Co.	26- 3- 9	630	cemented
Rubens, Sy., No. 1 Atwood, Orange Co.	19- 3-19	3,380	pump 25 b/d
Union, No. 1 Coyote, Orange Co.	22- 3-10	501	sd. drilling
Bardeen Pet., No. 1 Coyote, Orange Co.	13- 3-10	5,203	plug 5,020
Bridger, J., No. 1 Coyote, Orange Co.	15- 3-10	3,101	sd. sh. drilling
Severns Drlg. Co., No. 2 Coyote, Orange Co.	24- 3-11	7,272	suspended
Great American Pet., No. 1 Chino, San Bernardino Co.	18- 2- 8	2,642	suspended
Great American Pet., No. 2 Chino, San Bernardino Co.	18- 2- 8	3,039	sd. sh. drilling
Tehama Pet., No. 1 Santa Ana Canyon, San Bernardino	33- 2- 8	1,295	cleaning out
San Diego Pet. Co., No. 1 Chula Vista, San Diego Co.	32-18- 2	3,085	sd. sh. drilling

Extension Wells

During the past few years, outposts and deep tests in proved fields have been more successful than wildcat exploration in the development of production and this condition may possibly continue to prevail for some time to come. Deep tests in proved fields are somewhat in the same category with outposts since both in most cases depend upon the discovery of new sands as a primary requisite. The most important well in this category is the General Petroleum's No. 1 Berry, a deep test in the South Belridge Field of Kern County which a few days ago was rotating at 11,380 feet with very promising showings being logged. Officials of the company are rather reluctant to venture a guess as to the importance of the showings but contemplate an early production test if the next few feet show up as well as expected. This deep well has established a number of records in addition to being the deepest hole ever drilled and may chalk up some more before drilling operations are concluded. It has been cored at frequent intervals and the well has yielded the deepest core samples ever taken.

The Union's No. 1 Lillis-Welsh, an outpost and deep test in the North Dome of Kettleman Hills, is another important test under way in California at the present time. Unfortunately this hole is in a rather unfavorable condition due to mechanical trouble which developed as the result of premature explosion of a shot that was being run in to loosen the drill pipe which had become stuck and consequently it remains to be seen whether the company can get past the fish and make new hole. The company has milled down to 10,220 feet but still has a long way to go before reaching the old bottom at 10,944 feet where a good looking oil sand was logged by the North Kettleman Oil & Gas Co., which originally started the well. This outpost is located about a mile beyond present production in the western end of the Kettleman North Dome and is obviously a very important well as it will substantially extend the productive limits of the fields and definitely indicate the existence of deeper production below the present productive Temblor.

Montebello

The Texas Co. has landed a string of casing in No. 4 Barry, a deep test in the Montebello Field of Los Angeles Basin, and an early production test is expected to be made. Behind this action there is plenty of drama. For two or three weeks before the deep Cruz zone was picked up, the Texas Co.'s field men were a mighty disappointed lot because the company had three wells headed down to the deep pay and the deepest hole had failed to show a thing. The company had decided to suspend drilling operations on the entire trio on Saturday pending further developments. On Thursday the bit hit the pay and the anxiety that had been manifested for three long weeks gave way to optimism. No. 4 Barry has logged 45 feet of coarse oil sand and the outlook is quite promising for production although it is possible that some additional formation will be opened up before making the production test. The oil sand found in this well substantially improves the out-

look for the additional two wells which the Texas Co. is drilling on the Baldwin and Prugh leases. The Standard crossed up the boys by finishing No. 18 Temple in the upper zone instead of carrying it down to the deep Cruz zone and brought the well in pumping 232 bbls. of 27.3 gravity oil per day from 3,800 feet. The hole was finished with an 11¾-inch water string landed at 3,547 feet, however, and is therefore susceptable of being deepened to the lower zone. The Fullerton Oil Co. is expected to begin making hole in its second Cruz test within the next week or 10 days.

Huntington Beach

The Milroy Oil Co. completed its No. 1 Townsite in the Huntington Beach Field during the early part of the current week and this new well was finished flowing 599 bbls. of 23.5 gravity oil per day from 4,990 feet after the hole had been completed with a 4½-inch oil string carrying 500 feet of perforated and cemented through perforations at 4,490 feet. The Standard is reaming No. 65-B preparatory to landing water string and is rotating in No. 22 P. E. at 2,989 feet. Rigs are going up for two additional wells and both should be spudded in early in June. Several operators in the townlot section of the Huntington Beach Field are in a rather awkward position and may possibly face the loss of their respective wells. The wells in question were started on private property and subsequently deviated out beneath the state tidelands. The state has filed suit to enjoin the operators from producing oil and gas and Judge Turrentine has the case under advisement. The operators are willing to pay the state the regular royalty payments but the lessors of the property on which the wells are located will not consent as they do not recognize the state's rights to the tidelands. The operators have stipulated that the wells in question are bottomed beneath the tidelands and the state has countered with the suggestion that Judge Turrentine order all proceeds to be impounded until such time as the case may be adjudicated.

Mountain View

There were no new wells chalked up in the Mountain View of Kern County during the current week but a check indicates the probability that No. 2 Clendennen of the Mohawk Oil Co. and No. 1 Mid-State of the Hogan Petroleum Co. should be tanking oil within the next week or 10 days. Both are in the oil sand and the probability is that the Hogan Petroleum's well will be the first to be finished. No. 3 Porter Day of the Hogan interests stopped flowing early last week while the Sovereign Oil Co. was making a potential flow test on No. 1 S. J., a recent completion, but it was swabbed back on production flowing 300 bbls. of clean 29.1 gravity oil per day. The Standard is experiencing considerable difficulty in completing No. 1 Nichols since plugging the hole back from 5,843 feet to 5,557 feet because of bottom water. The Union Oil Co. is making good footage in No. 1 Wible, a recent spud in the Mountain View Field. No. 1 Kernco, the Union's first completion in this field, is one of the most eccentric wells in the field because one day it will flow 300 bbls. and then jump up to 700 bbls. the next. It is quite probable that the hole is bridging over from time to time.

Kettleman Hills

The Kettleman North Dome Association finished another excellent well in the North Dome during the current week when No. 32-28-J was brought in flowing 7,500 bbls. of clean 35.8 gravity oil per day from 8,000 feet after the hole had been finished with a 6⅝-inch liner including 400 feet of perforated and 5,997 feet of 3-inch tubing. The water string in this well, 9⅝-inch, was landed and cemented at 7,579 feet. This is the fifth well that Kenda has finished in this field during the past four weeks and the association has three or four more which should be producing within the next 30 days. The Standard Oil Co., which has completed two new wells in this field since May 1, has approximately eight new wells scheduled for completion before July 15. As new wells are finished, the crews are transferred to other projects for immediate work. The Associated Oil Co., which has been held up with mechanical trouble in No. 4 Whepley for the past several months, has succeeded in sidetracking down to 8,380 feet and has cemented a string of 6⅝-inch at 7,790 feet. The Superior Oil Co. is expected to finish drilling operations on No. 8 Huffman some time within the next 60 days. The Union is rigging up rotary drilling equipment on No. 7 King and should begin making hole in this project within the next 10 days. No. 8 King will be started upon completion of No. 6 which was rotating a few days ago at 6,100 feet.

Edison

Gilco, Inc., completed No. 1 Stuart-Gerard, a new well in the Edison district of Kern County, pumping 225 bbls. of clean 16.3 gravity oil per day from 2,165 feet after the hole had been plugged back from 2,347 feet because of bottom water. This well, located in Section 23-30-29, was originally started by the A. T. Jergins Trust, but was subsequently turned over to Gilco, Inc., which represents the Jergins interests, and Earl Gilmore, president of the Gilmore Oil Co. The A. T. Jergins Trust has just staked location for a new well to be drilled on the Hay property in Section 22-30-29 and spud is expected to be made within the next fortnight. The Edison area is located northeast of the Mountain View Field of Kern County and recent developments indicate the probable existence of a commercial accumulation of heavy oil. Acreage in this area is all held by reputable operators in relatively large blocks and consequently we may anticipate normal drilling.

The Rex Oil Co. has completed No. 2 in the Round Mountain Field of Kern County and this new producer, finished at 1,611 feet, was brought in pumping 177 bbls. of 16.1 gravity oil per day. Howells Brothers have abandoned No. 1-A in Section 32-28-29 as a duster at 1,523 feet after plugging the hole back from 2,380 feet. The Mount Poso Field is still relatively active. The Texas Co. has just concluded drilling operations on No. 5 Vedder and a production test is scheduled to be made next week. In the meantime, the company is building rig for No. 6 Vedder, which will be spudded in upon the completion of No. 5. The

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IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well, location—	S.T.R.	Depth	Status:
General Pet., No. 9 Capitan, Santa Barbara Co.	32- 5-30	702	sd. sh. drilling
Shell Oil Co., No. 2 Capitan, Santa Barbara Co.	32- 5-30	1,771	suspended
Fields, O. C., No. 1 Casmalia, Santa Barbara Co.	13- 9-35	mtl.	building rig
Fairview Oil Co., No. 1 Purisima, Santa Barbara Co.	18- 7-34	2,430	cleaning out
Barnsdall-Rio Grande, No. 8 Doty Elwood, Santa Barbara	15- 4-29	4,868	redrilling
Signal O. & G. Co., No. 2 Elwood, Santa Barbara Co.	tideland	5,415	flow mud, wtr.
East Elwood Pet. Co., No. 1 Elwood, Santa Barbara Co.	14- 4-29	2,200	sd. sh. drilling
Hastain & Stone, No. 1 Goleta, Santa Barbara Co.	9- 4-28	2,693	sd. sh. drilling
Union, No. 2 Santa Maria, Santa Barbara Co.	24-10-34	rig	rigging up
Richfield, No. 1 Rincon, Ventura Co.	17- 3-24	2,557	cemented
Woodrow Pet., No. 1 Rincon, Ventura Co.	4- 3-24	7,612	suspended
Continental, No. 3 San Miguelito, Ventura Co.	23- 3-24	1,618	hd. sd. drilling
Hancock Oil Co., No. 1 Fillmore, Ventura Co.	13- 4-19	3,357	suspended
Oil Ridge Oil Co., No. 1 Fillmore, Ventura Co.	1- 4-19	900	gr. sd. drilling
Piru Oil Co., No. 1 Piru, Ventura Co.	14- 4-18	rig	rigging up
Williamson & Donaher, No. 1 Simi, Ventura Co.	36- 3-18	960	suspended
American Drlg. Co., No. 1 Simi, Ventura Co.	6- 2-17	263	sd. sh. drilling
Prop. Service Corp., No. 1 Lloyd, Ventura Co.	24- 3-22	794	sd. sh. drilling
Laing & Jacobs, No. 1 Shiells, Ventura Co.	32- 4-19	701	suspended
Kirk, W. A., No. 1 Sulphur Mountain, Ventura Co.	21- 4-22	1,954	to land pipe
Mosher, J. W., No. 1 Santa Paula, Ventura Co.	22- 4-21	1,990	sd. sh. drilling
Las Posas Pet., No. 1 Las Posas, Ventura Co.	22- 3-20	6,480	sd. sh. drilling
International Oil Developers, No. 1 Conejo, Ventura Co.	33- 2-20	3,068	suspended
Shell Oil Co., No. 1 Gould Hills, Kern Co.	21-29-21	4,496	sd. sh. drilling
Standard Oil Co., No. 1 McKittrick, Kern Co.	15-30-22	2,551	bl. sh. drilling
Casa Mira Oil Co., No. 1 Belridge, Kern Co.	29-28-20	4,982	cemented
General Pet., No. 1 South Belridge, Kern Co.	30-28-21	11,375	O. and G. show
Union Oil Co., No. 18 North Belridge, Kern Co.	36-27-20	7,547	br. sh. drilling
Standard, No. 1 North Belridge, Kern Co.	36-27-20	4,528	bldg. rg on a.h.
Associated, No. 1 Lost Hills, Kern Co.	2-26-20	7,858	suspended
Inland Pacific, No. 1 Semi-Tropic, Kern Co.	29-25-21	1,118	suspended
Howells Bros., No. 1 Round Mountain, Kern Co.	32-28-29	2,380	plug 1,523
Ohio Oil Co., No. 1 Buena Vista Lake, Kern Co.	31-31-26	7,898	sd. sh. drilling
Caravel Pet., No. 1 Edison, Kern Co.	19-30-30	1,630	sd. sh. drilling
Alta Oil Co., No. 1 Union Avenue, Kern Co.	6-30-28	6,457	cleaning out
Mountain View Dev. Co., No. 1 Mountain View, Kern Co.	12-30-28	1,250	suspended
Gilmore-Snyder Oil Co., No. 1 Mountain View, Kern Co.	24-30-28	3,661	sd. sh. drilling
Severns Drlg. Co., No. 1 Mountain View, Kern Co.	24-30-28	6,129	sd. sh. drilling
Union Oil Co., No. 2 Mountain View, Kern Co.	23-30-28	2,660	sd. sh. drilling
Hogan Pet. Co., No. 4 Mountain View, Kern Co.	29-30-29	5,845	drill out cmt.
Standard, No. 1 Mountain View, Kern Co.	19-30-29	5,843	plug 5,557
Hoyt, Otis, No. 1 Mountain View, Kern Co.	19-30-29	mtl.	bldg. rig.
Jergins Trust, No. 1 Edison, Kern Co.	23-30-29	2,125	pump 225 b/d
Jergins Trust, No. 1 Edison, Kern Co.	22-30-29	....	location
Commanche Oil Co., No. 1 Commanche, Kern Co.	15-32-29	3,365	suspended
Tejon Ridge Oil Co., No. 1 Commanche, Kern Co.	23-32-26	rig	rigging up
Badger Oil Co., No. 1 Wheeler Ridge, Kern Co.	31-11-19	6,000	suspended
Russ Oil Synd., No. 1 Kingsburg, Fresno Co.	28-12-11	4,004	suspended
Bergman, Harry, No. 1 Kingsburg, Fresno Co.	12-12-11	6,000	sd. sh. drilling
Western Gulf, No. 1 S.P., Fresno Co.	15-17-15	8,698	sd. sh. drilling
Union, No. 1 Lillis-Kettleman, Fresno Co.	24-21-16	10,944	redrill 10,235
Farrel Pet., well No. 1, San Luis Obispo Co.	18-31-12	1,090	sd. sh. drilling
Willett Oil Co., No. 2 Cholame, San Luis Obispo Co.	10-25-15	316	sd. sh. drilling
Commonwealth Consd. Gas Co., No. 1 Tulare Lake, Kings	21-22-20	1,580	redrilling
Armacillo Oil Co., No. 1 Tulare Lake, Kings Co.	32-22-20	1,698	sd. sh. drilling
Tulare Basin Oil Co., No. 1 Tulare Lake, Kings Co.	2-23-19	1,192	recemented
Tulare Basin Oil Co., No. 2 Tulare Lake, Kings Co.	2-23-19	1,200	suspended
Kettleman Pac. Oil Co., No. 1 Tulare Lake, Kings Co.	11-23-16	863	sd. sh. drilling
Weller, Carl, No. 1 Tulare Lake, Kings Co.	11-23-16	785	sd. sh. drilling
Douglas, J. M., well No. 1, Monterey Co.	36-22- 9	3,600	br. sh. drilling
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	5- 2-10	4,760	redrilling
Pacific Northern Oil Co., No. 1 Guinda, Yolo Co.	23-12- 3	6,760	suspended
Buttes Oilfields Co., No. 1 Marysville, Sutter Co.	35-16- 1	2,731	gas—shut in
Buttes Oilfields Co., No. 2 Marysville, Sutter Co.	35-16- 1	4,320	suspended
Milham Exploration Co., No. 1 Tracy, San Joaquin Co.	5- 4- 5	4,561	hd. sh. drilling
Tehama Pet., No. 1 Murdock, Glenn Co.	10-22- 5	620	suspended
Pure Oil Co., No. 1 Chowchilla, Madera Co	7-10-14	2,526	sd. sh. drilling

Union and Shell are also expected to start additional wells in the near future. The General Petroleum spudded in No. 18 Glide during the early part of the current week and the bit is going ahead at 1,300 feet at present.

Midway-Sunset

The Standard Oil Co. has its No. 19-11-D in Section 11-32-24 in the oil sand at 3,050 feet and should make a production test within the next 10 days. Upon the completion of this well the company will begin drilling operations on No. 93-11-D in the same section. The Honolulu Oil Corp. ran into a gray sand in No. 32 in Section 14-32-24 at 3,478 feet and may consequently be obliged to plug back. Joseph McDonald's No. 1 Beverly was given a production test several days ago but the well sanded up after coming in pumping 224 bbls. per day from 2,186 feet. Out in the Kern River front, the General Petroleum completed No. 4 Young in Section 14-28-27, and brought it in pumping 131 bbls. of 13.3 gravity oil per day from 2,098 feet.

The Belridge Oil Co. has pinched back its No. 35-27, a recent completion in North Belridge, to 729 bbls. per day in order to keep its production within the alloted amount. This company has approximately 20,000 bbls. per day shut in at the present time. The Standard Oil Co. is building a new rig over No. 1 McPhail, an old abandoned hole which the company drilled to 4,528 feet a few years ago. The Union is making preparations to complete No. 18 Belridge in the Eocene at an early date but has no intention of producing the well as this work is being done for protective purposes only. The Ohio Oil Co. has not yet logged anything worthy of a test in its No. 1 K.C.L., a wildcat which the company is drilling in the extreme eastern end of Buena Vista Lake. This well was going ahead yesterday at 7,950 feet and the failure to find anything of importance does not improve the value of geophysical exploration in California. In the Commanche Point area, the Tejon Ridge Oil Co. is rigging up rotary drilling equipment in a new wildcat to be drilled in Section 23-22-29.

Ventura Avenue

The Associated Oil Co. plugged back No. 16 Lloyd from 5,280 feet to 4,334 feet and recompleted it flowing 828 bbls. of clean 30.6 gravity oil per day. In addition to this well, the Associated is working on a number of other projects in the Ventura Avenue Field and is building new rigs for additional future work. The General Petroleum is making rather slow time in drilling No. 13 Notten, a projected deep zone completion, as the bit is down only 5,200 feet at the present time. The Shell has just concluded drilling operations on No. 53 Taylor and it will be swabbed in within the next day or so. The Property Service Corp., a Ralph Lloyd company, has just spudded in No. 3 Dabney Lloyd, but it will be another several months before the bit is deep enough to pick up the anticipated pay. The Associated Oil Co. is doing the actual drilling on the well which may possibly open up a new field due east of the Ventura Avenue Field.

The Standard Oil Co. is building rig for a new well to be drilled on the Chase & Bryce property in the Goleta gas field of Santa Barbara County. Fred Cole's No. 1 Perkins, a recent completion in the Santa Barbara Mesa Field, is still holding up in good shape as production during the past 24 hours totaled 498 bbls., the oil being exceptionally clean and testing 17.3 gravity A.P.I. The East Elwood Petroleum Co. has material on ground for No. 1 Lowe, which will be drilled immediately. In the Capitan Field of Santa Barbara County, the Shell is grading location for No. 3 Covarrubias and the General Petroleum is rotating in No. 9 Erburu at 740 feet.

Long Beach

Two wells were put on production in the Long Beach Field of Los Angeles Basin during the current week although only one of them was a new well. This was the R. R. Bush Oil Co.'s No. 4 Hillseth, which was brought in pumping 72 bbls. of 22.4 gravity oil per day from 4,725 feet after the hole had been finished with a 5¾-inch liner carrying 930 feet of perforated. The Dabney Johnston Oil Corp. recompleted No. 62 pumping 120 bbls. of 30.1 gravity oil per day after plugging back the hole from 4,790 feet to 4,706 feet.

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Employers Trustees in Charge of Human Welfare

(Continued from Page 16)

strated in actual practice that the employer is overruled on some questions of mutual interest. The conferences under an employe representation plan must deal with real issues—such as wages, hours, and working conditions and not welfare topics alone.

If these fundamentals are not followed, the recourse of employes is to seek economic security by other methods.

However, an employe representation plan is a successful method of insuring to the worker the results in which he is most vitally concerned. These results are accomplished directly between the parties involved.

Certainly if a representation plan is sincerely and honestly conducted, and confidence of the employe is established as to the effectiveness of the plan, there is no strife and conflict between employer and employe—and normal business continues without interruption, and, over any reasonable period, at no greater cost than if the employer waits until the workers obtain their desires through legislation or other forms of coercion.

Business interests can no longer be dominated by the mass profits that are possible to obtain from the business. We have witnessed governmental spending on a large scale to relieve the unemployment situation. We have witnessed very substantial increases in taxes. The tendency is unquestionably, in one form or another, to divide the income from a business in excess of previous cost between (a) taxes for support of government enterprises, (b) increased payments to labor to provide economic security, (c) profit on capital invested. In other words we see a possibility of dividing the income above former costs in a business three ways instead of having it all available as return on the capital investment. One manifestation of this social or economic unrest will no doubt be found, in the not distant future, in the suspension of the enormous salaries and bonuses that have been paid to executives far in excess of any individual's capacity to contribute to any business.

Moral Integrity

Many profound students of economics have stated that the salvation of the world, particularly the industrial world, lies primarily in moral integrity in business. The simple principles are often the most difficult to apply and are usually the most effective.

With at least the atmosphere of government support, workers are likely to increase their demands upon business organizations to the extent of insisting upon measures that are unfair to the employer. It is too late to attempt to meet these conditions after they arise. The only satisfactory way to handle the situation is to establish a basis of fair dealing between management and workers to enable them to meet on common ground for the discussion of industrial relations problems before antagonism enters the picture. Few workers welcome actual clashes with their employers. Real and fancied grievances of a minor nature that are neglected, however, fan the spark of incipient resentment into an actual outburst and open the way to those few workers who may be deliberately hostile to the management to lead in organizing serious trouble.

Leaders in industry are being faced with a new program whereby social evolution is being speeded by legislative processes. The evolution was inevitable. If industrial leaders fail to recognize its significance the results can be disastrous. If they can promptly realize that, after all, they are the trustees in charge of human welfare as well as investments, industry and labor can emerge from the present social experiment on a more firm and co-operative basis. Employe representation plans constitute a proven successful method of rendering justice to workers and is a distinct advanced step in industrial relations. Adoption of a representation plan connotes recognition by an employer of his responsibilities towards his employes.

W. L. NEUBECK DIES

William Lincoln Neubeck, 70, founder and president of the Link Oil Co. of Tulsa, died at his home in Marietta, Ohio, Saturday, according to word received by O. H. Hovis, Mid-Continent manager of the company. Mr. Neubeck started his business career in the oil fields near Marietta and attained success as a driller and operator and when the Indian Territory was heralded as a new oil region he came to the territory, and the Link Oil Co. was active in Glenpool, Cushing and other active drilling plays in Oklahoma before and after statehood.

Central West Fields

(Continued from Page 73)

No. 1 Frank C. Wise farm, Section 17, Plain Township, is a gas well at 4,536 feet. Same company's No. 2 on the Hoover Development Co.'s farm, Section 9, same township, was a gas well at 4,537 feet. Hoover Development Co.'s No. 2 Hoover farm, Section 8, same township, is drilling.

In Guernsey County R. W. Dunn's test on the W. A. Prichard farm, Section 9, Londonderry Township, is dry at 1,330 feet. Ferguson & McCollough's No. 3 on the Fred R. Foraker farm, Section 20, is drilling. Paul Blank is drilling No. 3 R. A. McBride farm, Section 5, Cambridge Township.

In Vinton County, Cashdollar and others' No. 2 Daniel Will farm, Section 2, Elk Township, is a gas well at 1,016 feet.

In Meigs County Barton & Utsinger are drilling No. 1 Elmer J. Searle farm, Section 3, Rutland Township; Chase and others are drilling No. 2 P. L. McKnight farm, Section 2, same township, and Joe Rubin is drilling No. 1 Nora Smith farm, Section 4, same township. A. N. Bengel is drilling on the D. Grover Gill farm, Section 18, Salem Township.

In Hocking County, Albert Kelch and others drilled a dry hole in No. 2 F. M. Stout farm, at 848 feet and Preston Oil Co.'s No. 109 Sunday Creek Coal Co.'s property is a 16-bbl. initial producer.

No completions were reported from Indiana, Illinois, or Kentucky.

H. A. SEARLE DIES

COUNCIL BLUFFS, Iowa, June 2.—H. A. Searle, Sr., 64, president of the Searle Petroleum Co. here and former head of the MonaMotor Oil Co., was found dead in bed at his home here this morning of heart failure.

Mr. Searle founded the Monarch Manufacturing Co., which later became known as the MonaMotor Oil Co. Since disposing of the MonaMotor property, Mr. Searle has operated the Searle Petroleum Co. here.

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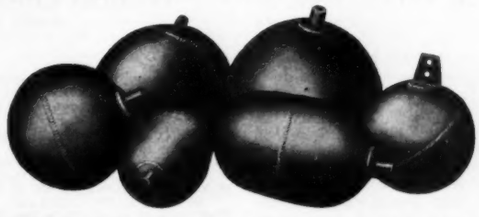

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HOUSTON, TEXAS

Three Rank Wildcats Staked in North Louisiana; Four New Locations Reported in Arkansas

By J. R. CRUMPTON
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., June 4.—The five completions in the North Louisiana district during the past week consisted of four dry holes and only one oil well, but to offset this, six new locations were staked, three of which were rank wildcats on good sized blocks. A summary of drilling operations at the end of the month compares favorably with the number active a month ago, but the figures show that the Converse and Zwolle Fields have less rigs running, due, no doubt, to the small producers brought in recently from the former field from a sand underlying the chalk rock around the 2,000-foot level. The number of wildcat operations has increased perceptibly, and each week adds from two to four new tests on the Sabine Uplift in the northwestern part of the state.

In Red River Parish, Louis L. Glass of Fort Worth, Tex., has assembled 6,000 acres in Sections 2 to 6, inclusive, Township 11, Range 8, and in Sections 22 to 35, inclusive, Township 12, Range 8. Derrick is up on location and the contract calls for drilling to begin by July 1 on a 4,000-foot test. In the Black Lake area near Campti, Natchitoches Parish, Red Craig has a block of 6,000 acres with a contract to begin a test by June 20. In the same parish, near the town of Marthaville, Roy Raines and others have 2,000 acres centering around Section 28-9-10 and intend to drill to at least 4,100 feet. A. F. Tarver has leased 1,400 acres extending in a narrow strip from east to west along a fault line in the Hosston area of Caddo Parish. He will drill a series of shallow chalk rock tests, and the first, his No. 1 Muslow Oil Co., Section 3-22-15, has spudded in and set 10-inch surface casing at 41 feet.

It is said L. E. Randall of Houston has six new type seismograph reflecting instruments to be put into service in the North Louisiana district, particularly in the Black Lake, Powhatan and Spanish Lake areas of Natchitoches Parish. The machines have been tested out by shooting a string of experimental shots at 4-mile intervals from the Mississippi River west to Red River near the town of Natchitoches.

One Producer

The only producer reported from the five completions was Pelican Natural Gas Co.'s No. 31 Louisiana Long Leaf Lumber Co., Section 29-8-11, in the East Zwolle Field. The well has an initial flow of 400 bbls. daily from 2,500 feet. The Zwolle Field also furnished one dry hole, Ben F. Smith's No. 1 Sabine Lumber Co., Section 12-7-12, abandoned at 2,500 feet. A wildcat in the Spring Ridge area south of the old Pleasant Hill Field, also had barren results. D. D. Alexander's No. 1 Brown estate, Section 9-9-11, was dry on drill stem test from 3,440-62 feet and was abandoned at the latter depth. The test was in the immediate vicinity of several wells that were drilled to the Washita and Fredericksburg in the upper part of the lower Cretaceous one of which was a fair gas well and another is producing about 20 bbls. daily of good gravity oil. On the eastern flank of the Zwolle Field, Roy Raines' No. 1 Beard, Section 8-8-10, was dry and abandoned at 2,682 feet. The other dry hole was a chalk rock test in Caddo Parish. W. O. Bliss' No. 1 McDade, Section 2-20-15, used acid at 1,640 feet, but failed to make a commercial well, the fluid containing 60 per cent salt water.

Rodessa Field

R. W. Norton has definitely given up hope of making an oil well of his No. 1-B French, Section 34-23-16, in the Rodessa Field, Caddo Parish, and has plugged back to the gas bearing Oolitic lime in the Glen Rose of the upper Trinity. The gas is found around the 5,600-foot level and has a high gasoline content. The Norton test was drilled to a total depth of 6,717 feet and a test was made of 7 feet of oil sand at 6,534 feet after setting 5¾-inch casing at 6,515 feet. Another good showing was encountered at the total depth but tested salt water. The 2½-inch casing has been set in the well at 5,450 feet and the pipe perforated from 5,500 to 5,900 feet to test the gas horizon. The test is quite a disappointment to North Louisiana operators who believe that permanent production in this district in the future will be from the lower Trinity series. Trinity production in Northwest Louisiana will in all probability be found below the depth of the present test from 8,000 to 9,000 feet.

West of the Dixie Field, Caddo Parish, J. T. Humphrey and others' No. 1 Powell, Section 14-19-15, set 7-inch casing to test a show at 2,394 feet but the well tested dry to the total depth of 2,403 feet.

In an attempt to extend the gas production of the Rodessa Field, Arkansas-Louisiana Pipe Line Co.'s No. 1 Rodessa Oil & Land Co., Section 23-23-16, northeast of the field, is coring around the 5,500-foot level. United Gas Public Service Co.'s No. 1 T. J. Walton, John Coleman Survey, about 1,000 feet west of the Louisiana-Texas line in Cass County, is another test off the proven structure of the Rodessa Field. The well is making good progress, drilling at 3,500 feet.

Wildcats

None of the other wildcats in the North Louisiana district developed anything of interest during the week. Natchitoches Parish seems destined to get a good play for deeper pay in several areas. The Black Lake region near Campti on the east side of Red River and the Powhatan and Spanish Lake area on the west side of the river, all in the northern part of the parish, have several tests started or in the making. Other wildcats in various parts of the parish, particularly in the Marthaville district, will be closely watched. Many operators believe that an eastern shore line condition exists in the latter area, similar to the western shore line structure in the East Texas Field.

Caldwell Parish has two wildcats drilling and one of them is active at this writing. Terrill & Price's No. 1 Louisiana Central Lumber Co., Section 18-11-3e, is drilling in shale and lignite at 2,620 feet. DeSoto Parish wildcats, most of them looking for chalk rock production, have failed up to this date. L. H. Alderson's No. 1 Peek, Section 25-11-13, tested dry with a show of oil at 1,698 feet. R. E. Collier's No. 1 Thigpen, Section 29-15-12, topped the chalk at 1,109 feet and is drilling in this formation at 1,535 feet. Dempsey-Manziel's No. 1 Thigpen, Section 33-13-13, has cored constantly from the 600-foot level and are arranging to treat with acid in the chalk rock at 1,605 feet. The top of the chalk was logged in this well at 1,375 feet.

ARKANSAS

This division reported one completion and four new locations. In the Miller County Field, Frank Roe's No. 1 Olivet, Section 4-16-26, cored salt water sand and was abandoned at 2,961 feet. There is no record of the log showing an oil sand around the expected depth. Two new locations were staked in this area, C. E. Murdock, Inc.'s No. 2 E. L. Beck, Section 33-15-26, an offset to the same operator's No. 1 Beck which is rigging up to pump. Fitzwater and others, original discoverers of the field, are preparing to drill their No. 1 H. E. Beck in Section 34-15-26. The other two locations were both wildcats. Earl F. Fox has derrick up on his No. 1 Coleman Brothers, Section 36-16-25, an interesting test west of Lewisville in Lafayette County, and Arkansas-Louisiana Pipe Line Co. has derrick up on its No. 1 McDonald, Section 28-1n-4e, in Lee County.

Although no permit has come through to date, it is reported that S. E. Wilson and others of El Dorado, Ark., are preparing to drill a test in Miller County, near the Bloomberg wildcat that has caused so much interest during the past few weeks. In this same area, W. F. Lacey, independent operator of Shreveport, has derrick pattern on location for his No. 1 Gibson, Section 30-19-27. To the northeast of this area, J. K. Wadley, trustee's No. 1 Dickert, Section 24-17-27, is drilling in lime at 4,125 feet. It is definitely certain now that E. L. Young, trustee's No. 1 Patterson, Section 5-19-28, will set a string of casing before testing. The total depth of the well, originally reported as 3,666 feet, has been corrected by steel line measurement to 3,655 feet. However the operators report a 6-foot core containing 2½ feet of saturated oil sand from the bottom of the hole. The next week should determine the status of the Bloomberg test.

Near Atlanta in Cass County, Kamon and others' No. 1 Savage, Mary Patterson Survey, made a drill stem test at 3,806 feet which developed salt water. The report is that no oil sand was detected in the Woodbine from which pay was expected. The test is temporarily shut down, waiting orders.

Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

North Louisiana

AVOYELLES PARISH

Company, well, farm name, section and block—	Remarks:
Haas & Stokes' No. 1 Lindstrum Land Co., 690 ft. S, 980 ft. E, NW cor. Sec. 34-1n-6e	Set 12-in. 40 ft.

BOSSIER PARISH

Bossier O. & G. Co.'s No. 1 Sherrill, 300 ft. S and W, NE cor. Sec. 13-9-12	S.D.; W.O. 2,261 ft.
Ford & Hanover's No. 1 Cryer, 330 ft. S and W, NE cor. NW SW Sec. 25-19-12	S.D. 875 ft.
McKinney & Stewart's No. 1 Nattin, 470 ft. W, 620 ft. S, NE cor. Sec. 22-22-14	S.D. 2,865 ft.
Producers O. & G. Co.'s No. 1 Werner, 660 ft. N and W, SE cor. Sec. 7-17-11	S.D. 3,211 ft.

CADDO PARISH

Ark.-La. P. L. Co.'s No. 1 Rodessa Land Co., 1,290 ft. N, 645 ft. W, SE cor. Sec. 23-23-16	Drlg. 5,472 ft.
Ark.-La.-Tex. O. & G. Co.'s No. 1 Simon, 330 ft. N and E, SW cor. Sec. 15-20-15	Setting liner 1,500 ft.
W. T. Bell et al's No. 1 Bostick, 1,320 ft. E, 660 ft. N, SW cor. Sec. 13-22-16	W.O. csg. 2,520 ft.
W. O. Bliss' No. 1 McDade, 330 ft. N and E, SW cor. NW NW Sec. 2-20-15	Dry and abd. 1,640 ft.
Burkett O. & G. Co.'s No. 1 Lindholm, 400 ft. S and E, NW cor. NE SE Sec. 15-17-14	S.D. 1,046 ft.; repairing rig.
A. D. King, tr.'s No. 1 Roach, 641 ft. E, 375 ft. N, SW cor. SE Sec. 4-14-16	S.D. 2,128 ft.

CALDWELL PARISH

Terrell & Price's No. 1 La. Central Lbr. Co., 300 ft. N, 200 ft. W, SE cor. NW NE Sec. 18-11-3e	Drlg. 2,620 ft.

CATAHOULA PARISH

T. R. Hincey's No. 1 Millsaps, Sec. 32-9-4e	Rigging up.

CLAIBORNE—SUGAR CREEK

United Gas Public Service Co.'s No. 1, 1,390 ft. N, 2,890 ft. E, SW cor. Sec. 32-20-5	Drlg. 3,764 ft.

DE SOTO PARISH

L. H. Alderson's No. 1 Peek, SE cor. NW NE Sec. 25-11-13	Tested dry 1,698 ft.
Berry Oil Co.'s No. 1 Wemple, Sec. 14-12-11	Swbng. 2,665 ft.
R. E. Collins' No. 1 Thigpen, 515 ft. N, 970 ft. E, SW cor. NW NE Sec. 29-15-12	Drlg. 1,535 ft.
Dempsey & Manziel's No. 1 Thigpen, 375 ft. S, 330 ft W. NE cor. SW NE Sec. 33-13-13	Coring 1,605 ft.
Gaskill et al's No. 2 Guy, 370 ft. S and W, NE cor. NW SE Sec. 8-11-13	Setting 6-in. 1,270 ft.
Hirschfield-Bailey's No. 1 Youngblood, Sec. 9-11-14	Drlg. 1,200 ft.
Geo. M. LeGrand's No. 1 Fulmer, 200 ft. N and W, SE cor. NW SW Sec. 1-11-16	Drlg. 1,007 ft.
J. S. Tuffree's No. 1 McGill, 450 ft. N, 150 ft. W, SE cor. SW SE Sec. 1-10-13	S.D. 2,125 ft.

(Continued on Page 92)

Daily Average Production

Estimated daily gross production of all companies for the week ending June 1, follows:

NORTH LOUISIANA

	Bbls.
Caddo light	4,600
Caddo heavy	1,590
Converse	1,525
Cotton Valley	570
DeSoto and Red River	1,505
Elm Grove	375
Haynesville	3,800
Holly	180
Homer	2,665
Pleasant Hill	220
Sarepta-Carterville	740
Urania	2,890
Zwolle	4,650
Total	25,310
Total last week	25,560
Difference	250

SOUTH ARKANSAS

Champagnolle	1,315
El Dorado	2,475
Lisbon	360
Miller County	715
Nevada	900
Smackover light	2,415
Smackover heavy	19,800
Stephens	615
Urbana	2,300
Total	30,895
Total last week	30,620
Difference	275

Best Completion in Eunice Pool, New Mexico; Carbon County, Wyo., Well Shows More Oil

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., June 4.—Continental Oil Co.'s No. 8-A Meyers, in the Eunice Pool in New Mexico, proved to be the best completion in that field, making 152 bbls. an hour after treatment with acid. One location in the Eunice Pool was released by the Repollo Oil Co. The Texas Co.'s No. 1 Lea, a wildcat north of the Lea Pool, swabbed 100, 151 and 124 bbls. in a three-day test and is drilling deeper. The General Crude Oil Co.'s No. 1 Cushing, in the Cooper area, required 200 tons of mud to kill after a gas blowout. Two locations were made in the Hobbs Pool. Stovall & Marshall's No. 1 McIlvain, in southern Eddy County, had a hole full of water and was abandoned. Continental Oil Co. completed a 40-bbl. well on the Rattlesnake Dome in San Juan County.

In Colorado the Mountain Fuel Supply Co.'s No. 3-B Wilson, on the Hiawatha Dome, was completed for 15,000,000 feet of gas.

Mountain Fuel Supply Co. completed a 9,000,000-foot gasser in the Baxter Basin Field in Wyoming. The Earl W. Reeder test in Carbon County is showing more oil while drilling deeper. One location was made on the Hidden Dome in Washakie County, and another on the Oregon Basin structure in Park County. One new location was reported in Weston County.

Montana Power Gas Co.'s No. 1 Neil, which proves the South Cut Bank and Cut Bank Fields to be continuous, is pumping 80 bbls. a day. One completion and three new locations were reported in the Cut Bank Field. One gas well and one dry hole were reported in the Kevin-Sunburst Field. The Hobson Dome in Judith Basin County is to have another test.

NEW MEXICO

Lea County

Acid treatment turned the Continental Oil Co.'s No. 8-A-1 A. E. Meyers, C NE SW Section 8-21-36, into one of the best wells so far completed in the Eunice Pool. On a short test after treatment it made 152 bbls. an hour, or at the rate of 3,648 bbls. a day with 6,480,000 feet of gas. Before treatment it made 24 bbls. of oil an hour with 2,000,000 feet of gas. It is on production and pinched to the top allowable for the field of 185 bbls. a day. The total depth is 3,875 feet. It is an offset on the west to the Atlantic Oil Producing Co.'s No. 1 State, which made 1,008 bbls. initial after being treated with acid.

One new location in the Eunice Pool was released in the Repollo Oil Co.'s No. 1 State, NE NW NE Section 19-21-36, which is building derrick. It is a west offset to the Getty Oil Co.'s No. 1 State, which made 1,142 bbls. initial when completed several years ago.

Continental Oil Co.'s No. 17-A-3 A. E. Meyers, C SW NW Section 17-21-36, began spudding May 17 and is waiting after cementing the 12½-inch at 317 feet with 200 sacks.

Tide Water Oil Co.'s No. 2 Coleman, C NW NE Section 17-21-36, is drilling at 3,590 feet in lime, and the Atlantic Oil Producing Co.'s No. 2-B State, C NE SE Section 8-21-36, is shut down for water at 45 feet. The Gypsy Oil Co.'s No. 1 Bell-State, C SW SE Section 8-21-36, is drilling at 2,600 feet in salt.

Lea Area

The Texas Co.'s No. 1 Lea, SW cor. NW Section 14-20-34, 3 miles north of the Lea Pool, and apparently the discovery well of a new pool, drilled out plug at 3,560 feet, total depth, and swabbed 100 bbls. the first day, 151 bbls. the second day and 124 bbls. the third day. It is drilling deeper and at 3,579 feet is in brown sand and swabbing and flowing. Its No. 2-B Lynch, C SE SW Section 27-20-34, is pulling rods to shoot at 3,750 feet, total depth.

Jal Area

Barnsdall Oil Corp.'s No. 1 Forrest, NE NW SW Section 24-25-36, is running rods and tubing to pump after being shot with 120 quarts at 3,268-3,316 feet. It is estimated at 20 bbls. a day. E. B. Guess and others' No. 2 Conditt, NW NE SE Section 11-25-36, has cellar and pits completed. The Repollo Oil Co.'s No. 1 Stephens, SW cor. NE Section 13-25-36, is drilling at 2,845 feet in lime and anhydrite. The Continental Oil Co.'s No. 13-A-11 Sholes, C SW SE Section 13-25-36, is shut down at 491 feet after cementing the 13⅜-inch at 488 feet.

Cooper Area

General Crude Oil Co.'s No. 1 Cushing, SW SE NW Section 23-24-36, an old gas well drilling deeper for oil, ran into a cavity at 3,394-97 feet and had a blowout. It took 200 tons of mud to kill the well so drilling could be resumed. It is coring at 3,462 feet. A drill stem test at 3,375-3,428 feet showed 7,000,000 feet of gas, but no oil.

Hobbs Area

Two new locations in the Hobbs Pool were released in the Continental Oil Co.'s No. 1 Grimes, SW cor. SE Section 28-18-38, which has cellar completed, and the Shell Petroleum Corp.'s No. 3 Berry, NE cor. SE Section 31-18-38, which is building derrick. Skelly Oil Co.'s No. 2 Turner, C NE NW Section 34-18-38, is drilling at 1,845 feet in anhydrite, and Noble Brothers' No. 2 Shell-State, E NE SW Section 24-18-37, is shut down for casing at 2,826 feet. Shell Petroleum Corp.'s No. 2-B State, NE cor. NW Section 33-18-38, is drililng at 3,295 feet in lime and anhydrite, and Gypsy Oil Co.'s No. 8 West Grimes, NW SW NW Section 32-18-38, is drilling at 2,900 feet in lime and anhydrite. Repollo Oil Co.'s No. 3 Grimes, NW SW NW Section 28-18-38, is rigging up rotary.

Eddy County

Stovall & Marshall's No. 1 McIlvain, C SE NE Section 5-25-27, Black River district, southern Eddy County, had a hole full of water at 2,367 feet and is being plugged and abandoned.

Continental Oil Co.'s refinery at Artesia suffered a loss of $5,000 in a fire Sunday night. The blaze originated in the pump house and the heaviest loss was damage to laboratory equipment.

San Juan County

Continental Oil Co.'s No. 34, C SW SW Section 2-29-19, Rattlesnake Dome, was completed in the Dakota at 725-740 feet for 40 bbls. initial production.

R. C. Oswell's No. 5 Government, NE SE NE Section 33-30-11, Aztec district, is drilling at 950 feet, and Meier & Culberson's No. 1 Lemley, NE Section 32-30-11, is making a water shutoff at 1,000 feet at which depth gas cleaned the hole. H. C. Stratton's No. 1 Grauel, SW NE SE Section 25-30-12, is drilling at 1,360 feet. Aztec Oil Producers, Inc., No. 2, C SE SE Section 28-30-11, is drilling at 1,350 feet with a show of gas.

COLORADO

Moffat County

Mountain Fuel Supply Co.'s No. 3-B Florence Wilson, C SE SW Section 15-12n-100, Hiawatha Dome, is being completed as a gas well in the lower Wasatch at 2,824-92 feet, and is estimated at 15,000,000 feet a day. The well will be connected with the Western Public Service Co.'s pipe line system into Utah. Mountain Fuel Supply Co.'s No. 4-B Florence Wilson, C NE NW Section 23-12-100, has derrick completed and is waiting for rotary equipment from No. 3-B Wilson.

Stanolind Oil & Gas Co.'s No. 6 Parkinson, Lot 37, SW Section 23-4n-92, Iles Dome, drilled a 17-inch hole to 122 feet and stopped to run and cement the 13⅜-inch with 85 sacks at 116 feet. It is drilling at 445 feet.

Montezuma County

McElmo Oil Co.'s No. 1 West, NE NW NE Section 31-36-17, McElmo district, is moving in 6¼-inch pipe for a water shutoff at 1,750 feet, total depth. The hole is reported showing some gas.

Fremont County

John Milner and others' No. 1, SW SE SE Section 30-18-69, Florence district, is drilling at 3,010 feet in gray shale.

Prowers County

Trojan Oil & Gas Co.'s No. 1 Lotus Oil, NW NE NE Section 15-23-46, Lamar district, is reaming the 8¼-inch at 2,590 feet, 65 feet off bottom.

Park County

South Park Oil & Gas Co.'s No. 1

Shallow Test Strikes the Madison Lime in Pekisko, South of Turner Valley

By VICTOR LAURISTON
Staff Correspondent, Candian Fields

CHATHAM, Ontario, June 2.—The striking of the Madison lime at shallow depth on the Pekisko Hills structure some distance south of the Turner Valley Field is the outstanding feature of recent development work in Alberta. Pekisko Hills Co.'s No. 1, LSD 6, Section 6-17-2w5, got the lime at a reported depth of 870 feet and has cemented 10-inch casing in the top of the Madison at 873 feet prior to drilling into the potential naphtha or crude oil horizon. Owing to the shallow depth, surface water was not fully shut off and the hole was full of water when the lime was reached. A considerable gas flow with a strong gasoline odor was reported at the lime contact.

The test is a mile south of the Bar-U ranch on Pekisko Creek, and about a half mile from the Prince of Wales' E. P. ranch. It is apparently on a high point of the Highwood uplift. The geology of the Pekisko Hills area was worked out for Nordon Corp., Ltd., by Dr. Robin Willis under the direction of B. F. Hake, chief geologist of the Nordon company. Doctor Willis made the location and the drilling was handled by Clarence Snyder, while Calgary men interested in the development include B. F. Hake, J. W. Moyer, L. Phillips, and W. A. Carmichael. Wellington Oil & Gas Co. of Calgary holds a considerable royalty and stock interest in the venture, and Model Oils, Ltd., and Calmont Oils, Ltd., are also interested. Adjacent acreage is held by Wellington Oil & Gas Co., Highwood-Sarcee Oils, Ltd., and Alberta Associated Oil Co., the latter being one of the largest holders of acreage on the southern end of the Highwood uplift.

Location was made in December and drilling started early in the year. The log shows the following formations:

Home sand, at 190 feet; lime bands, 210 feet; crooked hole sand, 230 feet; Oolite bed, 395 feet; upper Dalhousie coal, 485 feet; lower Dalhousie coal, 550 feet; brown sand lower Dalhousie, 570 feet; Fernie shale, 695 feet; Madison limestone, 870 feet.

In the Turner Valley Field, the Madison is usually reached somewhat below 3,000 feet and in some producing wells nearer 6,000 feet. Several earlier tests further north on the Highwood structure have got the Madison. A mile north, on the flank of the structure, Western Alberta Oil Co.'s No. 1, rotary test, LSD 11, Section 7-17-2w5, got the lime at 3,132 feet. This test after continuing some distance with saturated cores bailed small quantities of 37 gravity crude. Water was encountered below this and the well was abandoned. Hudson's Bay Oil & Gas Co.'s No. 1 Highwood, Section 1-18-3w5, 6 miles north of the Pekisko test, got the lime at 2,150 feet, at that time a comparatively shallow depth, tested nearly 2,000,000 feet of gas and struck water at a considerably higher elevation than the oil in western Alberta. The Pekisko test would appear to indicate distinct possibilities of an important new field in this section of the southern foothills; and if actual production is encountered, extensive drilling is sure to follow.

Highwood Taking Production

In the far south end of the Turner Valley Field, Highwood-Sarcee Oils' No. 1, LSD 16, Section 21-18-2w5, is reported drilling below 120 feet in the lime around 5,472 feet. The gas flow, around 2,000,000 feet in the top of the lime, increased to 5,000,000 feet with deeper drilling and the pressure jumped from 200 to 600 pounds, the separator filling with naphtha when the bit was removed to be sharpened. The well is making around 70 bbls. a day on the separator

(Continued on Page 94)

Esche, SE cor. NW Section 5-9s-76, Como district, which has been delayed for months at 2,465 feet, has sidetracked pipe and tools and is reported making new hole at 2,508 feet.

WASHINGTON

Northwest Oil Research Corp.'s No. 1-A Norco, SW Section 26-22-20, Wenatchee Heights district, Chelan County, is drilling at 995 feet in medium gray quartz sand. The Forks Prairie Oil Co. has not yet closed a deal with the Sun Oil Co. for the completion of its No. 1 Rosalie, Section 9-28-13w, Clallam County, which is standing at 2,350 feet waiting for pipe. Hole is full of mud to hold down gas from two zones at 1,500-1,700 and 2,150-2,250 feet, which has not been tested, but is estimated at several million feet. Van Bell Holding Co.'s No. 1 Betsinger, SW NW Section 26-39-2, Bellingham district, Whatcom County, is drilling below 600 feet in blue shale after setting pipe at 585 feet for water shutoff. Abbottsford Oil & Gas Co.'s No. 1 King, SE SW Section 27-39-2, is spudding.

WYOMING

Sweetwater County

Mountain Fuel Supply Co.'s No. 2 Union Pacific, C SW SE Section 11-19-104, North Baxter Basin, gauged 9,000,000 feet of gas a day from the Dakota at 3,185-3,200 feet. It will be connected with the Uinta Pipe Line Co.'s line into Utah.

Five workmen were injured when a 100-foot section of the Uinta Pipe Line Co.'s 18-inch gas line parted and began swishing around like the uncontrolled end of a rubber hose, 1 mile east of Green River. A crew of 200 men is engaged in uncovering the line into Utah, cleaning and painting the pipe and wrapping it with fiber. One of the crews was engaged in this work at Green River when the explosion occurred.

Natrona County

Midway Oil Corp.'s No. 1 Boyer, SW NE NE Section 23-35-79, recently completed in the second Wall Creek, was deepened 14 feet to 5,205 feet and production increased to 280 bbls. of oil daily and 3 bbls. of water an hour.

Albany County

Ohio Oil Co.'s No. 1 Chappell, C SE NW Section 28-21-76, East Rock River district, is drilling at 1,740 feet.

Carbon County

Earl W. Reeder, Inc.'s No. 1 Union Pacific, C SW SW Section 19-20-83, Overland Dome, is drilling at 4,681 feet. Oil has risen an additional 200 feet, believed to be coming from sand topped at 4,590 feet, either the Muddy or Dakota.

Fremont County

Monongahela Oil Co.'s No. 1 Wisda, NE SE SE Section 13-28-93, Crook's Gap district, began spudding May 29 in a 20-inch hole for a Dakota test. The Tropic Oil Co.'s No. 1, C SE SW Section 34-27-90, north flank of the Lost Soldier Field, which was temporarily abandoned at 1,015 feet, is building standard rig to go deeper. Kinney-Coastal Oil Co.'s No. 1 Chatterton-Weeks, C SW NE Section 22-3n-1w, Pilot Butte, is drilling at 3,900 feet and is expecting the Lakota within the next 100 feet.

Washakie County

Nagle and others' No. 1, Lot 4 (C SW SW), Section 31-48-90, Hidden Dome, is a new location and has material on the ground.

Hot Springs County

California Exploration Co.'s No. 1, NE SE NE Section 12-44-97, Waugh Dome, is drilling at 785 feet. Argo Oil Co.'s No. 10 Ellen, NW Section 14-44-98, Hamilton Dome, an offset to the Empire State Oil Co.'s No. 4, is a location.

Park County

Paul Stock has released a location for his No. 1 Government, SE cor. NE Section 29-51-100, Oregon Basin Field. This is the first drilling reported in this field for more than a year.

The Stanolind Oil & Gas Co.'s No. 21 Rosenberg, NE SW NE Section 26-58-98, Frannie Dome, which was completed in the Tensleep at 3,297 feet, has not yet been tested. It is estimated at 400 bbls.

Frannie Oil Co.'s No. 2 Northern Pacific, SE SW SE Section 23-58-98, a recent completion, pumped 214 bbls. in 15 hours.

Converse County

E. B. Jones' No. 1 State, SW cor. Section 16-32-69, Shawnee district, is building derrick. Same interests' No. 1 Pittman, C NE NW Section 27-32-69, is shut down at 750 feet, and the Wyoming Southern Oil Co.'s No. 1 Brown, near C Section 27-32-69, is shut down at 665 feet.

Weston County

Chadron-Osage Oil Co.'s No. 25, SW SE Section 14-46-64, Osage Field, cut 14 feet of saturated sand, shot it and is cleaning out bridge. Carl Cundy's No. 8, SE NW NE Section 31-46-63, is spudding. La Fleishe Oil Co.'s No. 1, C SW SW Section 17-46-63, is moving in materials.

Dr. W. G. Earle's No. 3, NE NE Section 36-47-64, North Osage, is a location.

Crook County

Dr. B. R. Kinter's No. 1 Rockford-Wyoming, NE SE Section 13-52-62, Rocky Ford district, is drilling at 728 feet.

MONTANA

Glacier County

Montana Power Gas Co.'s No. 1 Neill, C NE Section 20-33-5w, which came in last week as a producer and proved up a large area between the South Cut Bank district and the field proper, is on the pump and making 80 bbls. a day at a total depth of 3,010 feet. This well indicates that the field will be producing over an area 30 miles long and 3 to 4 miles wide.

One completion this week is Nyhagen-Bell's No. 2 Anderson, NW cor. SW Section 26-35-6w, which swabbed 100 bbls. the first day and 50 bbls. the second day at 2,950 feet, total depth. The pay was at 2,867-87 feet.

Montana Headlight Oil Co.'s No. 2 Williams, C NE NE Section 11-34-6w, lost its hole at 2,795 feet, within striking distance of the pay, and is skidding rig 60 feet to the south.

The Texas Co. released three new locations as follows: No. 3 Ray Purdy, W NW SW Section 35-35-6w, drilling at 305 feet with rotary; No. 3 Antrim, E SE SE Section 34-35-6w, location; and No. 1 Consolidated Gas Lease, 105 feet west of C Section 15-35-5w, digging cellar and sump. Last named is in the gas area and is in the center of a group of consolidated leases and will not require offsetting.

P. B. Anderson and others' No. 1 Anderson, SW cor. NW Section 26-35-6w, is drilling at 1,500 feet, and Annand & Hutchings' No. 1 Bonnett, NW cor. SE Section 10-32-5w, is drilling at 590 feet. Lon Crumley's No. 2 Weaver, Lot 8, Section 27-35-6w, is running the 10-inch at 1,566 feet. The Dakota-Montana Oil Co.'s No. 3 Gilham, NE NE Section 3-34-6w, is drilling at 2,000 feet, and the Indian Oil Co.'s No. 1 Clark, C SE SE Section 4-34-6w, is drilling at 540 feet. The Montana Headlight Oil Co.'s No. 2 Yunck, C NW SW Section 1-34-6w, spudded May 25.

Montana Power Gas Co.'s No. 1 Fuller, N SE Section 17-35-5w, is building rig, and its No. 1 People's Unit, E of C Section 14-33-5w, is drilling at 2,525 feet. Same company's No. 3 Seeba, SE cor. NW Section 2-34-6w, set the 8¼-inch on bottom at 2,819 feet, where it had a show of oil.

Nadeau Brothers' No. 3 Van de Mar, W SW NW Section 35-35-6w, is spudding at 230 feet, and the Par Oil Co.'s No. 3 Haines, SW cor. Section 2-34-6w, is drilling at 1,600 feet.

Santa Rita Oil & Gas Co.'s No. 1 Hardy, NW NE Section 27-35-6w, which was reported a completion at 2,910 feet last week is making 80 bbls. on the pump. R. C. Tarrant's No. 1 Getty, C NE SE Section 2-34-6w, is drilling at 2,705 feet, and his No. 1 Jones, C SW SE Section 31-34-5w, spudded May 25.

The Texas Co.'s No. 2 fee, Lot 8, Section 15-35-6w, is drilling at 2,395 feet, and its No. 3 fee, 660 feet south of C Section 15-35-6w, cemented the 10¾-inch at 585 feet. Same company's No. 3 Hinkle, SW cor. NE Section 2-34-6w, is drilling out plug after cementing the 7-inch at 2,820 feet, and its No. 1 Long, W NW SW Section 23-35-6w, is installing pumping equipment. Texas Co.'s No. 1 Morrison, NE SE SE Section 22-35-6w, is drilling at 1,805 feet, and its No. 1 Schlag, C SW SW Section 26-35-6w, cemented the 7-inch at 2,872 feet.

Carbon County

Ohio Oil Co.'s No. 14 Maddox, C NW NW Section 10-7s-21, Dry Creek, cemented the 10-inch at 887 feet.

Judith Basin County

Fletcher E. Hunt's No. 2, C SW SE Section 20-14-15, Hobson district, which is located half a mile west of No. 1, is drilling at 145 feet. No. 1 encountered a fault. J. H. Wilson, of Golden, spotted No. 2 after a geophysical survey.

Pondera County

The California Co.'s No. 1 Northwestern Properties Co., SW NE SE Section 20-28-4w, North Pondera, is building derrick.

Teton County

Ned Cheedle and others' No. 1 Balsinger, NE SE NW Section 20-27-5w, West Pondera, is spudding at 200 feet.

Liberty County

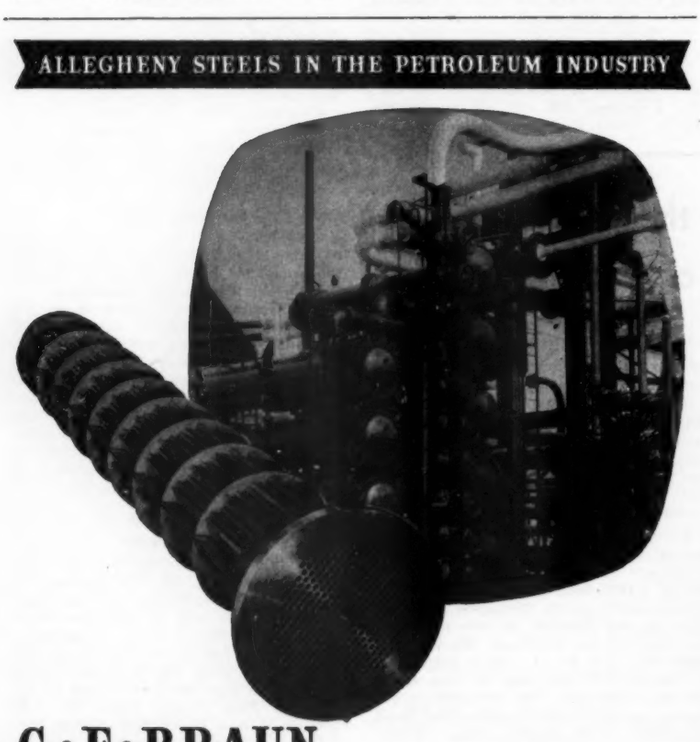
Harold Hayes and others' No. 1 Strode, NW SW Section 3-36-4e, Sweetgrass Hills, was unable to recover tools and is abandoning at 1,691 feet.

Toole County

Bruce P. Radigan and others' No. 2 McDonough, NW SE Section 17-33-2e, Devon district, is waiting for crew from No. 1. Same firm's No. 1 McDonough, NW cor. Section 17-33-2e, is fishing at 840 feet.

The Big West Oil Co.'s No. 1 Sorrell, C NW SE Section 7-34-3w, Kevin-Sunburst Field, was completed for 2,000,000 feet of gas in the Sunburst sand. C. T. Oien's No. 1 Schumacher, NE SW SW Section 2-34-2w, was dry and abandoned in the Madison contact. Vanderpas & Hepstad's No. 6 Helgerson, NW SE SW Section 28-35-1w, is drilling at 1,100 feet.

ALLEGHENY STEELS IN THE PETROLEUM INDUSTRY



C·F·BRAUN REFINERY EQUIPMENT

Whenever heat and corrosion is a prime factor in Heat Exchanger construction, ALLEGHENY Alloy Steels are widely used and specified. Witness this typical installation of Heat Exchangers built by C. F. Braun & Co., Inc. of Alhambra, Calif. This company recently used over 120,000 lineal feet of ALLEGHENY Alloy Seamless Tubing in a battery of Heat Exchangers for a large oil company, including tubesheets and baffles of this same positive heat and corrosion resisting alloy—a tribute to the dependability of ALLEGHENY Alloys in modern refinery operation.

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TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the question is considered to be confidential

Questions requiring a discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

Temperature Exchange Related to Color of Exposed Surface

We would like to have you tell us whether an atmospheric inner cooler, the structure of which is composed of 1-inch pipe, should be painted a light color or a dark color to obtain the greatest amount of radiation from the surface exposed to the atmosphere. The temperature in the cooler ranges between 140° and 250° F. We would appreciate a few figures or sources of information which would indicate the desirability of a light or dark surface at these temperatures.—D. G. K.

The practical application of the theories relating to the influence of color on the absorption and reflection of heat has been studied by observing temperature rise and loss of gasoline in relatively small tanks which were painted in several colors.

H. A. Gardner's Table, Cir. 44 Paint Manufacturers Association of the United States, shows the temperature rise of liquid contained in small tanks painted in various colors, when subjected to the rays of a powerful light. The table follows:

RISE IN TEMPERATURE OF BENZINE CONTAINED IN SMALL TANKS PAINTED IN VARIOUS COLORS (GLOSS FINISH) WHEN SUBJECTED TO RAYS OF CARBON ARC FOR PERIOD OF 15 MINUTES

Color—	Rise in deg. F.
Tin plate	19.8
Aluminum paint	20.5
White paint	22.5
Light cream paint	23.0
Light pink paint	23 7
Light blue paint	24 3
Light gray paint	26 3
Light green paint	26.6
Red iron oxide paint	29.7
Dark Prussian blue paint	36 7
Dark chrome green paint	39.9
Black paint	54 0

The figures used in this table are not strictly applicable to tankage exposed to sunlight. The heat absorbed by a surface closely placed to an incandescent arc is largely due to radiant heat energy, i.e., the longer waves beyond the visible spectrum, in which the sunlight is relatively deficient. Polished metals and paints yielding a polished metallic surface are very useful in reflecting these longer heat waves, and thus show up to better advantage in a test using an incandescent arc than they would if similarily exposed to sunlight.

The engineering department of one of the large eastern refiners made the following test:

Cans of 2 gallons capacity were painted, as indicated in the table below, equipped with gooseneck vents and seven-eighths filled with gasoline. Cans were similarly exposed on a roof and temperature recorded over a period of 20 weeks. The average loss by evaporation is shown in the following table:

	Avg. temp. vapor space deg. F.	Loss by weight per cent
Gas-proof white paint	86.0	4.39
Aluminum paint	88.9	4.70
Gas-proof light gray paint	90 2	5 33
Gas-proof battleship gray	92 2	5.54
Red graphite paint	92.5	5 75
Black graphite paint	95 8	5.93

Ludwig Schmidt and C. J. Wilhelm, in R. I. 3138, U. S. Bureau of Mines, report the quantity of gasoline lost by evaporation and the decrease in gravity in test tanks when under the conditions shown in the table.

Results of comparative evaporation tests on four 12,000-gallon horizontal gasoline-storage tanks from May 29 to October 15, 1930:

Tank	Description—	Evaporation losses—gallons	Evaporation losses—per cent	Loss in gravity, deg. A.P.I.
A	Painted white and protected with insulated housing	112	1.40	0.45
B	Covered with aluminum foil	170	2.12	0 55
C	Painted red	284	3.54	0 89
D	Coated with aluminum paint	187	2.34	0.62

These data prove that light colors are desirable for surfaces where a volatile liquid is to be stored, because losses due to the absorption of heat from the atmosphere are less than when such surfaces are dark colored. When the maximum heat exchange is desired, from hot to cold, as in an atmospheric cooler, a dark surface should be used, because the dark colors absorb temperature. Radiators used for heating if covered with dark nonmetallic paint radiate approximately 20 per cent more heat than those covered with light paint.

The heat, in the question, is to be reduced from the range 140° to 200° F. to as near atmospheric temperature as possible and the dark surface will take up this cooling influence. However, the difference cannot be great enough to be of much consequence; more theoretical than practical. So the deciding factor when choosing between a light colored surface and a dark one for a cooler should be one of expense. The cheaper plan is to leave pipe black, as received.

The Coley Kerosene Process for Reducing Zinc Ores

Can you give me any information relating to what is called the Coley process for reducing zinc ore, in which an oil is used as the reducing agent?—A. L. E.

The Coley process for reducing oxides was briefly described in the Petroleum Times, January 21, 1928, page 118, as follows:

Mr. Coley and his colleagues have during the last three or four years been engaged in experimenting on a general process for the reduction of metallic oxides based upon the supposition that a paraffin oil at the moment of cracking would be extremely active as a reducing agent. A revolving cylinder containing the oxide is heated to the proper temperature, which in the case of zinc is between 1,000° C. and 1,200° C. Inside the cylinder is a water-cooled pipe through which the paraffin oil is allowed to flow; the cracking of the oil gives nascent carbon and possibly other nascent elements or compounds, which effect the reduction very quickly. From the experiments which they have made it seems that there is one temperature for each metal most suitable for this reduction, and that in dealing with a mixture of oxides of different metals it usually happens that the whole of one metal is reduced before any of the remaining metals are affected. The process has been applied to a dozen metals, but only in the cases of iron and zinc have the operations been conducted on a commercial scale. Those who have experience of the process are satisfied that it is capable of application on a commercial scale to a considerable number of naturally occurring carbonates and oxides, as well as to some of the complex ores which are troublesome and expensive to smelt by existing methods. In some of these cases an inconvenient metal may be entirely removed in a volatile state and yet may be easily recovered. In the case of the reduction of zinc oxide or carbonate, the vapors of zinc, with other vapors and solid particles carried over from the process, are passed into a water spray, which brings down the whole of the metal in a state which facilitates its collection, drying and distillation.

Chemicals Used in Petroleum Refining—Sulphur Dioxide

This discussion of sulphur dioxide is a part of a series of short articles about the chemicals used in petroleum refining. The first was printed in the issue of March 15, 1934.—Editor.

Sulphur dioxide is used in the refining of kerosene, engine distillate, and lubricating oils, usually being introduced in the liquid form. The process was first developed about 25 years ago by Edeleanu for the treatment of kerosene.

The purpose of this reagent is the removal of aromatic and unsaturated hydrocarbons, sulphur, nitrogen, asphalt and gums. Equal volumes of the oil and sulphur dioxide are contacted at approximately 14° F. Upon standing two layers are formed, the impurities collecting in the lower or heavier layer and the lighter or upper layer being the purified oil. The sulphur dioxide extract is purified and then returned to the system to be used again.

The chief source of sulphur dioxide is from sulphur or iron pyrites by burning the material in the presence of air, the oxygen of the air combining with the sulphur to form the dioxide. The purest product is obtained from sulphur. Some of the ores, especially the sulphides of copper, zinc and lead, yield sulphur dioxide during the smelting operation, but this source is of minor importance.

Since sulphur dioxide is essential for the manufacture of sulphuric acid, its preparation was discussed under sulphuric acid in this series, published in the issue of March 22, 1934, page 63.

The first step in the process of refining petroleum oils with sulphur dioxide is the removal of moisture from the oil; blowing the lubricating stocks with air, passing the kerosene through a tower packed with rock salt. The oil is cooled before entering a mixing tower, where it meets the cold liquid sulphur dioxide. This tower is suitably packed to insure intimate contact. The cold raw distillate is pumped in at the bottom, then rises while passing through a falling stream of cold sulphur dioxide. The treated distillate flows from the top of the tower and the sulphur dioxide extract is withdrawn from the lower part. The distillate passes from the tower through exchangers, cooling the entering raw distillate, to a series of evaporators, for the removal of entrained sulphur dioxide, and finally to a low pressure evaporator maintained at a vacuum of about 30 inches. From this unit the finished distillate is pumped to storage. The sulphur dioxide extract is purified in a similar manner, being heated to convert the dioxide to the gas form. This is gradually cooled, compressed to reform it to the liquid condition, and is then returned to the system.

Improved motor oils are made by the sulphur dioxide method, the reagent being combined with benzol for certain types of oil. Quoting from the article by O. P. Cottrell, in the Journal of December 1, 1932, page 10:

"We have found that the addition of benzol to sulphur dioxide increases the solution power to the extent that the viscosity index has been improved considerably on all types of distillates. It is now possible to produce, from Mid-Continent distillates, finished oils having viscosity indices practically the same as Pennsylvania. Benzol, being miscible in all proportions to oil and sulphur dioxide, makes an ideal solvent. The percentage of benzol to sulphur dioxide depends upon the type of distillate to be treated and the results desired. It is extremely flexible, and can be changed to meet practically any refining condition. On account of the stability of benzol and the stability of sulphur dioxide, it can be used indefinitely without any loss of solvent effect. Due to the boiling points of benzol (176° F.) and sulphur dioxide (14° F.) it can be very satisfactorily and economically recovered, and the type of the equipment is generally the same as the well-known Edeleanu plants.

"The results indicate that Mid-Continent cylinder stocks can be upgraded to Pennsylvania oils regarding viscosity index and gravity; and, generally, their carbon residues lie considerably below those of oil of Pennsylvania origin."

Further details of the process are to be found in The Oil and Gas Journal, March 7, 1929, page 119, and December 1. 1932, page 10, above mentioned.

Properties — Formula SO_2; molecular weight, 64.06; specific gravity, 1,4337; melting point, 99.2° F.; boiling point, 14°F.; solubility at 32°F., 79.79 parts in 1 part water and 15.6 parts at 122° F. A dangerous gas at ordinary temperature, strong suffocating sulphurous odor.

Price—Obtainable in cylinders of many sizes, up to 150 pounds, and tank cars. The price at works in cylinders is about 7 cents a pound and in tank cars about 5 cents.

FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

This department is conducted in order that men connected with the drilling, producing and transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depth of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

More Detailed Information About "Accurate Screen Analysis"

In your discussion of the proper mesh for screened pipe in your issue of April 12, 1934, you say that careful sampling of the sands and accurate screen analysis are necessary. I am not quite clear as to what is meant by accurate screen analysis. May I ask you for a little more detailed information on this point?—R. E. F.

As you of course know, sands vary widely in their grain character and composition. Some sands are found to be uniformly graded from coarse to fine sizes, while others will be made up chiefly of grains of uniform size. Screen analysis of sands and the importance of it are discussed as follows by Clifford S. Wilson, production engineer, who has made a study of this subject:

"A large majority of sands show a characteristic trend toward the extremes of the grain-size range, and since it is the coarser grains of the sand that control the bridging of the screened pipe, an accurate determination of the grain-size characteristic is necessary in any attempt to determine whether or not it will be held by a screened pipe of given mesh or to determine the mesh of screened pipe that will hold it and still permit as much production as possible. Such a determination is accomplished by an accurate screen analysis of the sand.

"A screen analysis is made by separating the sand into its fractional components according to grain size. The standard screen is well suited to this purpose because of the related sequence of sizes. The width of each mesh of any screen is equal to 1.414 times the width of the mesh of the next smaller size. Thus the individual mesh areas or the larger screen are twice the individual mesh areas of the smaller screen.

"A proper screen analysis requires care in weighing both the bulk sample and the individual separated fractions. The preferred method is to weigh the fractions cumulatively, adding them one by one. This procedure compensates the error of each weighing in such a manner as to minimize its effect.

"The data obtained from the screenings are calculated to percentages corresponding to the grain-size fractions, and curves are plotted for percentage and grain size on standard logarithmic paper. The resulting curves give a graphic representation of the grain-size characteristics of the sand."

Tank Specifications Adequate to Withstand Earthquake Shocks

In what has been written about damage to oil fields in California as a result of earthquakes I never have seen anything that told whether there was any damage done on tank farms. Can you tell me whether the big steel tanks were damaged or whether they stood the strain?—T. N. N.

Members of the California district subcommittee on tanks who made an exhaustive investigation into the effects of the earthquake which visited California in March, 1933, expressed the opinion that the principles of design embodied in the oil tank specifications adopted by the American Petroleum Institute are entirely adequate to resist earthquake shock, though minor changes in details and workmanship might be advisable.

The survey made by the California committee disclosed the fact that while there were thousands of tanks in the earthquake area, there were only four instances of actual shell failure. A large amount of the damage resulting from the earthquake was to tank roofs, and seam leaks were frequent. The report ascribes losses of tank contents principally to ruptured tank connections. Where the soil was alluvial, or in places where ground had been filled, the committee noted a general condition of settled tanks generally from one-half to 4 inches in depth.

Cable Tools Not Always Used in Completing Rotary Wells

Are cable tools always used in completing a well that has been drilled with rotary equipment? Why is this done? I wish you would explain the difference between the two completion methods, cable tool and rotary.—N. D. S.

All wells in the Unite States were drilled with cable tools up to 1901. Introduction of the rotary system grew out of the need for a method better adapted to the penetration of soft, caving and consolidated formations, such as were encountered in Oklahoma, Texas and California. Cable tools formerly were used almost altogether in completing rotary-drilled wells because of the danger of "passing up" producing sands with the rotary. Taking of cores has removed much of this danger and many wells now are completed with the rotary equipment.

The difference between the two methods of completion is discussed by H. C. George in his "Oil Well Completion and Operation."

"If cable tools are used in completing a well," says Mr. George, "a control casinghead should be placed on the top of the casing, and the well 'drilled in' slowly and carefully. The hole should be bailed down and the cuttings examined frequently so that the character of the pay formation and the fluid content of the reservoir may be known. Often water is encountered in the lower part of the sand, and it is very important that its location be determined accurately. Many good wells have been ruined by 'drilling out the screw' before pulling the tools to bail the hole. If the sand does not carry water, it is the general practice to drill the full thickness of the sand. Sometimes where lower formations are known to be free from water it may be best to drill 10 to 50 feet through the sand into the underlying formation. This will provide a sump into which the loose sediments and cavings may fall, thus prolonging the intervals between clean-out jobs.

"Sometimes the upper member of a sand zone contains only gas, and frequently this gas is separated from the lower part of the sand containing the oil by a thin shale or lime 'shell' or other impervious stratum. Where such conditions exist, it is necessary to drill through this 'shell' before oil production is secured. In other cases, especially in deep wells where gas under high pressure occurs with the oil, it may be impossible to drill more than 2 or 3 feet into the sand. High-pressure wells frequently 'drill themselves in.'

"The methods of completing a well with rotary tools are different from those used in completing a well with cable tools. Although drilling in with rotary equipment has a distinct advantage over drilling in with cable tools where high gas pressure is encountered, there is a disadvantage in that the pay sand must be cleaned before the well is put on production. In many cases water or oil is used successfully to wash out the bottom of the hole before cementing and in penetrating the pay sand. In some of the fields conditions in the reservoir are such that the formation pressures are believed sufficient to clean the walls properly, while in other fields the wells are completed only after the producing sands are washed carefully with equipment designed for that purpose. The wash pipe usually is pulled out after the washing operation is completed, and the well is bailed down. However, in some instances the wash pipe is left in the well to serve as tubing. If the well does not flow after bailing down, it may be swabbed for a short time or shot to stimulate production. The well is then 'placed on the pump.' If production is not obtained by one of these methods, the well either is drilled deeper or abandoned."

Directed Drilling Offers Marked Advantages in Certain Cases

I am writing to ask if you can tell me what is meant by directed drilling. All drilling is directed, I suppose, but this term seems to be used in some particular sense.—F. K. O.

Directed drilling is discussed in detail by R. E. Allen in "Mining and Metallurgy" for December, 1933. The following is taken from the article to answer your question:

"Directed drilling, although still comparatively new in the oil-producing business, is a practice of many years' standing in the mining of metals and nonmetals where it is common to drill several radiating holes from one location for the purpose of blocking out ore bodies and mineral deposits. In mineral survey holes the depths are relatively shallow compared with deep oil wells, but the requirements of direction control and accurate hole surveys are even more exacting than with oil wells.

"Oil wells are not drilled primarily to survey the oil sand so the only reasons for drilling deviant holes are to save expense or secure more oil production. Just as many other practices have both a proper use and an abuse, so has the directed drilling of oil wells. However, the use which may be made of the practice does not affect the consideration due it as a drilling accomplishment.

"One use to which directed drilling may be put is that of avoiding the expense of drilling on an inaccessible surface location, such as a submerged or precipitous one, by using a more convenient and accessible location as a drilling site. Sometimes considerable depth of hole may also be saved by drilling from a topographically lower location such as exists in some parts of the Ventura County, California, area.

"Another important use of directed drilling is found in offshore drilling in the ocean fields of California and the lake and bay fields of the Gulf Coast and Venezuela. In many such fields the cost of an adequate foundation for the derrick exceeds the cost of drilling the well. In such locations it is possible to drill several holes from one foundation and derrick and by properly directing the holes an area equal to that of six or seven normal locations may be penetrated and drained.

"The directed hole, if successfully controlled, may have no bends but rather a course gradually deviating farther and farther from the vertical so that when the oil sand objective is reached it is not uncommon for holes to be 60 degrees from the vertical."

Why Was It Called That?

BARTLESVILLE

Bartlesville, site of the first commercial oil well in Oklahoma, drilled in 1897 and still producing, was named for the man who founded it, Col. Jacob H. Bartles. Colonel Bartles first settled in 1873 on a spot 6 miles from the present town of Bartlesville. He built the first flour mill in the Indian Territory in 1877. In 1878 he planted the first wheat grown on the Caney River. He built what is now the Santa Fe railroad from Caney, Kans., to Collinsville in 1898-99. He was the first man to establish an electric light and waterworks plant in Oklahoma.

MARKET RECORD OF OIL SECURITIES

Active Oil Stocks Listed on New York Stock Exchange

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1934 High	1934 Low	Week ended June 2 Sales	Week ended June 2 High	Week ended June 2 Low	Week ended June 2 Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	1933 High	1933 Low	1932 High	1932 Low	1931 High	1931 Low
53¾	41½	1,100	50	48¾	50	Amerada Corp.	767,375	N.P.	50cQ	1-31-34	47⅝	18½	22¾	12	23	11¼
35¼	21¾	7,000	25⅝	23½	24	Atlantic Refining	2,665,234	$25	25cQ	6-15-34	32½	12⅞	21⅞	8⅝	23⅝	8⅝
10	7	3,300	8	7⅜	7½	Barnsdall Corp.	2,248,795	$5	....	5-11-31	11	3	7	3⅜	14½	4
19¼	11⅛	18,700	13¼	11⅞	12	Columbia Gas & Elec.	11,610,036	N.P.	12½cQ†	5-15-34	28⅛	9	21	4¼	45⅝	11⅝
14¼	9½	16,300	10⅞	10	10	Consolidated Oil Corp.	14,218,835	N.P.	28c	4- 7-34	15¾	5	9	4	15⅞	4⅛
22¾	16½	14,700	20⅝	18¼	18⅝	Continental Oil of Delaware	4,738,593	$5	25c	4-30-34	19⅝	4⅞	9⅜	3⅝	12	5
22¼	15⅛	2,200	18¾	17¼	17¼	General Asphalt	387,149	$10	....	6-15-32	27	4⅝	15½	4¾	47	9⅝
5⅜	3¼	1,600	4	3¾	3¾	Houston Oil (new)	1,098,618	$25	....	10-17-30	7⅜	1⅞	5⅜	1⅛	14⅛	3
3⅜	1¾	100	2	2	2	Louisiana Oil Refining	1,302,158	N.P.	....	.....	4	⅝	2¼	½	4½	1
14¾	11	14,200	13¼	12⅜	12½	Mid-Continent Petroleum	1,857,912	N.P.	25c	5-15-34	16	3¾	8⅞	3¾	16¾	5
20¾	11½	500	16¼	15	16¼	National Supply of Delaware	382,591	$25	....	5-15-31	28⅝	4	13	3½	70½	5
15⅞	10½	4,900	12¼	11⅜	11⅜	Ohio Oil Co.	6,563,107	N.P.	15c	6-15-34	17⅝	4¾	11	5	19½	5⅛
8⅝	6½	1,100	7¼	7	7	Pacific Western Oil	1,000,000	N.P.	25c‡	10-25-33	9½	3	8	3	15	2⅞
2½	1¼	500	1½	1½	1½	Panhandle P. & R.	198,770	N.P.	....	.....	4¼	⅜	1¼	¼	4¼	⅜
20¾	15⅛	11,400	19⅜	17⅞	18½	Phillips Petroleum	4,154,687	N.P.	25c	5-14-34	18¾	4¾	8⅛	2	16⅝	4
16¾	10	2,200	12⅜	11⅝	11⅝	Plymouth Oil Co.	990,261	$5	25cQ	3-31-34	17⅝	6¾	12½	6	19	6
14⅞	9⅜	3,200	10⅝	9⅞	10	Pure Oil	3,038,370	N.P.	....	9- 1-30	15⅜	2½	6½	2⅞	11⅞	3¼
39⅛	33	1,100	34⅝	33⅝	33⅝	Royal Dutch N. Y. shares	432,224	$14	$1.07½	8-14-33	39¾	17⅝	23¾	12⅛	42⅝	13
38⅜	25⅜	1,400	32¾	30¼	30¼	Seaboard Oil of Delaware	1,204,460	N.P.	15cQ§	6-15-34	43⅜	15	20⅜	6⅝	20¾	5½
11⅞	7⅝	4,700	8⅝	8	8	Shell Union Oil	13,070,625	N.P.	....	6-30-30	11⅝	4	8¾	2½	10¼	2½
89	58	200	75	75	75	Shell Union Oil pfd.	400,000	$100	....	7- 1-31	61	28½	65¼	18	78	15
11¼	8¼	1,900	9⅛	8¼	9	Simms Petroleum	461,000	$10	25c	1-17-34	12⅜	4⅞	7½	3¼	11	3½
11½	7⅞	1,100	9½	9¼	9¼	Skelly Oil	1,008,514	$25	....	12-15-30	9⅞	3	5¾	2½	12⅞	2
19⅞	14	23,200	16⅛	15	15	Socony-Vacuum	30,905,006	$25	15cQ	6-15-34	17	6	12¼	5¼	21	8⅝
42⅞	30⅝	6,500	33¾	31¾	31⅞	Standard Oil of California	13,102,900	N.P.	25c	6-15-34	45	19½	31⅞	15⅛	51⅜	23⅛
41	33⅞	100	38¼	38¼	38¼	Standard Oil of Kansas	200,000	$10	50cQ	7-31-34	39⅞	12¾	16½	7	19	7⅝
50⅛	41⅛	11,900	43⅜	42¼	42½	Standard Oil of New Jersey	25,740,965	$25	50cSA	6-15-34	47½	22¾	37⅝	19⅞	52½	26
62	51½	300	58½	58	58½	Sun Oil	1,733,013	N.P.	25cQ	6-15-34	59	35	39⅞	24⅝	45¼	26¾
29⅜	21½	6,700	24¾	23	23½	Texas Corp.	9,352,371	$25	25cQ	7- 1-34	30⅛	10¾	18¼	9¼	36¼	9⅞
6½	3⅛	1,100	4	3⅞	..	Texas Pacific Coal & Oil	880,703	$10	....	12-31-29	6½	1⅝	4	1½	6½	1⅞
14¼	8½	15,500	12½	11⅞	12⅛	Tide Water Associated	5,618,672	N.P.	....	2-16-31	11¾	3½	5⅝	2	9	2⅛
84¾	64½	400	83	80¾	82½	Tide Water Associated pfd.	666,524	$100	$1.50Q	4- 1-34	65¼	23½	60	20	68	20½
20½	15	2,700	16½	15¾	15¾	Union Oil of California	4,386,070	$25	25cQ	5-10-34	23⅝	8½	15⅝	8	26⅝	11
21	15¾	1,700	19⅜	19	19¼	Union Tank Car	1,200,000	N.P.	30cQ	6- 1-34	22⅝	10½	19¼	11⅜	25½	16
5¾	3½	900	4	3¾	3⅞	Wilcox Oil & Gas	424,839	$5	....	5-10-28	5½	2	8¾	2¾	9⅜	2¾

*Ex-dividend. †Payable in 5 per cent convertible preferred stock. ‡Initial dividend. §Plus extras.

Active Oil Stocks Listed on New York Curb

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1934 High	1934 Low	Week ended June 2 Sales	Week ended June 2 High	Week ended June 2 Low	Week ended June 2 Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	1933 High	1933 Low	1932 High	1932 Low	1931 High	1931 Low
38	31¾	100	36	35	35	Buckeye Pipe Line Co.	200,000	$50	75cQ	6-15-34	39¾	25	35	17½	56	30
5½	2⅝	4,600	3⅝	3	3	Carib Syndicate	579,000	25c	....	.....	7¾	¼	⅝	¼	2⅝	⅛
126½	116	No sales	..	..	..	Chesebrough Mfg. Co.	120,000	$25	$1Q†	6-29-34	129	71	90	53	129½	75
4¼	1¾	22,600	2⅝	2½	2½	Cities Service	37,804,394	N.P.	....	6- 1-32	6¼	1½	6⅞	1¼	20¾	5
3¼	1¼	300	2¼	2⅛	2⅛	Colon Oil	2,200,000	N.P.	....	.....	4	¼	1¼	¼	3½	¼
3⅞	1⅝	200	1⅞	1¾	1¾	Cosden Oil	399,687	$1	....	.....	3⅛	1⅜	2⅞	¼	3⅝	⅝
13⅜	9⅝	7,100	12⅝	12¼	12⅛	Creole Petroleum	6,974,356	$5	....	.....	12	4¾	3½	1¾	3⅞	1⅝
7½	4¾	800	6¾	6¼	6⅜	Darby Petroleum	509,696	$5	25c	2-15-34	8	2½	7⅛	1⅝	2½	1⅝
2¼	1⅝	No sales	..	..	..	Derby Oil & Refining	263,162	N.P.	....	.....	2¾	⅞	3	1	6	1½
36	31	No sales	..	..	..	Eureka Pipe Line	50,000	$100	$1Q	5- 1-34	41¾	20	35	18	36	19
76¾	56½	1,200	60	57¾	60	Gulf Oil Corp.	4,538,101	$25	....	10- 1-31	62	24	44¾	23	75½	25⅝
46⅜	33½	2,900	44⅛	42½	42½	Humble Oil & Refining (new)	8,923,935	N.P.	25cQ	7- 1-34	105½	40	55	35⅝	72	44½
15¼	12⅝	8,700	15¼	14¼	14⅜	Imperial Oil of Canada	26,857,152	N.P.	25cSA†‡	6- 1-34	15⅞	6½	10⅞	6¼	18¼	7⅝
6⅞	3⅞	300	5	4⅜	4⅜	Indiana Pipe Line	300,000	$10	15cSA	5-15-34	8	3⅛	7½	2¾	21⅛	5½
28½	19⅜	27,300	28½	26⅜	26⅜	International Petroleum	14,247,088	N.P.	56cSA†‡	6- 1-34	23½	8⅞	12¼	8	15½	7⅝
3¾	2⅛	3,600	3½	3¼	3¼	Louisiana Land & Exp.	3,000,000	N.P.	....	.....	2¼	⅛	2½	½	2	½
5⅞	4	No sales	..	..	..	Lion Oil Refining	270,000	N.P.	....	10-27-30	9½	1¼	3½	⅞	6¾	1½
8¾	4¾	100	6	6	6	Lone Star Gas	5,382,723	N.P.	16cQ§	3-31-34	11⅞	4¾	11	3⅝	29	5½
5½	4	600	5	4⅞	5	Mountain Producers	1,682,182	$10	15cQ	4- 2-34	6½	2½	4¾	2⅛	5⅞	2
18⅛	14	1,500	15½	15	15½	National Fuel Gas	3,810,183	N.P.	25cQ	4-16-34	20	10	14⅝	8	26½	9⅝
9½	7⅝	No sales	..	..	..	National Transit	509,000	$12.50	40cSA	6-15-34	10	5½	10½	6	17½	5
2⅛	1¾	No sales	..	..	..	New Bradford Oil	1,445,202	$5	10c	3-15-34	2⅛	½	⅞	¼	1½	½
2¾	1	400	1⅛	1⅛	1⅛	New Mexico and Arizona	1,000,000	$1	....	.....	1⅞	½	1¼	⅜	3	¾
4¾	3	No sales	..	..	..	New York Transit	100,000	$5	15cSA	4-14-34	4⅞	3	9¾	7½	14½	5⅞
7	4⅝	300	5⅞	5⅛	5⅛	Northern Pipe Line	120,000	$10	25cSA	1- 2-34	6⅛	4¼	5½	3½	35½	20
2⅝	⅞	3,800	1⅝	1½	1½	Pantapec Oil	1,608,700	N.P.	....	.....	3¾	⅛	⅝	⅛	2	⅜
3⅛	1¼	No sales	..	..	..	Ryan Consolidated	296,931	N.P.	....	.....	4¼	⅝	2⅛	⅝	3	⅜
7⅞	5¾	100	6¼	6¼	6¼	Salt Creek Producers	1,496,859	$10	20cQ	5- 1-34	9¼	3½	5½	2⅞	7⅝	2⅜
24¾	17½	800	22½	22⅛	22⅛	South Penn Oil	1,200,000	$25	30cQ	6-30-34	22¼	11	16½	9⅝	28⅞	9¼
5¼	4	300	5¼	4¾	4¾	Southern Pipe Line	100,000	$10	10cSA	3- 1-34	6	2⅛	10	3¾	17	7
47	41	No sales	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	$1Q	7- 2-34	43	24½	37	27	42½	25
32¾	25	8,300	26⅝	26¼	26¼	Standard Oil of Indiana	15,528,504	$25	25cQ	3-15-34	34	17	25⅛	13⅛	38½	13½
17⅝	14⅝	1,000	15⅝	15⅛	15⅛	Standard Oil of Kentucky	2,606,983	$10	25cQ	6-15-34	19¼	8⅜	15⅞	8⅝	23⅝	12⅛
16⅝	12⅞	200	13	12⅞	13	Standard Oil of Nebraska	190,822	$25	25cQ	6-20-34	20½	11	19	10¼	36½	16
27½	18¼	950	20	19	20	Standard Oil of Ohio	753,740	$25	....	1- 3-33	41	15½	30⅛	15½	62½	23
2	1⅛	1,700	1½	1¼	1¼	Sunray Oil	1,162,840	$5	....	4-15-31	1½	¼	⅝	⅛	5¼	¼
11	4⅝	500	6⅛	6	6	Texon Oil & Land	936,028	N.P.	15cQ	6-30-34	13⅜	6¼	10½	4½	12⅞	2½

*Ex-dividend. †Plus extras. ‡Payable in Canadian funds. §Payable in preferred stock.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

NATURAL GAS DEVELOPMENTS

Oklahoma Gas Rate Case Returned to Commission

The Oklahoma Natural Gas Corp. rate case, which attracted attention in 1931 when Governor Murray stepped into the negotiations for a statewide reduction, is on its way back to the Oklahoma Corporation Commission for apparent dismissal.

Chief Justice Riley said the order, asked by both the commission and company attorneys, should have been made more than two years ago, but it had been mislaid.

The company appealed in 1931 when the commission ordered the maximum rate for the 53 towns in Oklahoma served by the company reduced from 57 cents per 1,000 feet to 47 cents pending an investigation.

Later it was agreed between Governor Murray, company officials and the commission that a uniform rate of 45 cents would be fixed, and all litigation dismissed.

In another decision the court upheld authority of the commission to set gate rates charged by a gas company to cities operating their own distributing system.

It affirmed the commission order reducing the gate rates of the Consolidated Gas Co. for gas at the gates of Granite and Mangum from 18 cents to 15 cents per 1,000 feet for the first 100,000 feet. Logan W. Carey, company receiver, had appealed.

Potter County, Pa., Field Extension Is Indicated

COUDERSPORT, Pa., June 4.—A considerable extension of the Potter County gas field is indicated in the Harrison anticline prospecting of the Oriskany sand by Lycoming Producing Co. With the drill 5 feet in the Oriskany the Andrew Schofield well of the company is showing between 25,000 and 30,000 feet of gas and casing is being run in for cementing to handle the anticipated heavy increase in production. The hole is down 4,650 feet. The Tully lime was encountered at 4,054 feet, the Onondaga at 4,619 feet, and the top of the Oriskany at 4,645 feet.

Two earlier tests on the Harrison anticline are North Branch Development Co.'s Frank Moe, abandoned 10 feet in the Oriskany, and Bayless and others' Louis Franke, dry in the sand but to be drilled deeper.

GRANT 35-YEAR GAS FRANCHISE

LOS ANGELES, Calif., June 2.—An ordinance granting and regulating a franchise for 35 years to Hue Follendore and the American Liquid Gas Co. to transport and pipe gas through the streets of Holtville, has been given its first reading by the City Council. Work must start within four months and within three years the company must serve the reasonable needs of the city. The company will pay 2 per cent of annual gross receipts to the city for the franchise after the first five years.

ILLINOIS RATE REDUCTION

CHICAGO, June 4.—The Illinois Commerce Commission has ordered reduction of about 11 per cent or an estimated $45,000 a year in natural gas rates charged in Springfield, Ill., by Central Illinois Light Co. Irvin Rooks, general counsel for the commission, stated that the rate reductions in Illinois ordered by the commission in 1933 totaled $7,360,729. Reductions ordered thus far in 1934 are estimated at $1,619,853 a year.

Hints on Care and Operation of Small Gas Wells in the Appalachian Field

By J. H. NEWLON
Equitable Gas Co., Pittsburgh, Pa.*

The producing formations drilled through in the Appalachian Field are unconsolidated sandstones, separated by shales, coals, limestones and conglomerates. The gas production from these unconsolidated sands is usually obtained from a series of "pays" in the same formation, being separated only by thin layers of shale, generally called "a break." In some sections 20 or more of these gas-producing formations occur in less than 3,500 feet of structure, but only on rare occasions are there more than seven producing formations in any one well, but most of the time two to three.

The producing formations are comparatively thin, with an average porosity of 12 to 15 per cent, and a great number of these beds when penetrated begin to cave and especially so if allowed to come in contact with water or oil. Therefore, since a great number of the oil and gas-producing formations, including the separating beds, are water bearing, the problem of separating one from the other taxes one's ingenuity.

At the beginning of the present year there was a grand total of approximately 50,000 producing gas wells in the Appalachian Field, ranging in age from 1 to 50 years, the average age being about 14 years. Based on 1932 production figures these 50,000 gas wells produced in 1933 a grand total of 265,000,000,000 feet of gas, or an average of 14,500,000 feet per day, not including casinghead gas. Thirty-five thousand (or 70 per cent) of these wells should be classed as small gas wells. Their average daily delivery ranges from 3,500,000 to 15,000,000 feet per day. The remaining 15,000 wells (or 30 per cent) will average from 20,000,000 to 40,000,000 feet delivery per day.

These figures disclose the fact that the gas delivered by these small wells account for more than 50 per cent of the total 1933 delivery of all gas wells in the eastern fields. Therefore, it is evident that these "small" wells are the backbone of the industry, the production from which forms the base-load necessary to be available 365 days of the year. If these statements are accepted as true, then what branch of the industry should have more thought, study and action in order that these small wells may be conserved and thus assure the survival of the industry in the future. No attempt has been made to estimate the amount of gas a well should deliver into the line necessary to pay its carrying charges. There is, of course, an economic limit or point in the life of a well when it is no longer profitable to operate. But there are some conditions of a variable nature which make it necessary to consider each well as a separate problem, such as delivery capacity, annual royalty, maintenance cost and proximity to market.

Reasons Wells Are Small Producers

At the present time there are a great number of wells which are small due to having been improperly finished. In other words, having found a small amount of gas production in the upper sand, the drilling was continued through all known productive formations in that particular area, with the result that gas was found in some of the lower formations, and in an attempt to save all the gases discovered, the packer was set in the hole above the upper gas pay, thus leaving several hundred feet of open hole below the packer, and this great amount of open hole resulted in the production being retarded by cavings, water, oil seepages, etc.

Also, in a great number of cases, the casing is set way up in the hole and drilling continued to the lower formations where production was found, and then with a view of economizing by not running any more casing or tubing, the gas is produced through the casing with the result that the open hole below the bottom of the casing caves in from water or oil seepages and retards production.

It is the general opinion of those in the industry that the original daily delivery and the potential life of a great number of individual wells, and in some cases entire pools have been greatly reduced by being allowed to produce at too low pressures at the face of the sand. Wells of large open flow and high rock pressure increase their velocity through the sand as the back pressure is decreased. If there is fluid in the sand, its natural position would be at the bottom of the "pay," and when the velocity of the gas through the sand reaches a point sufficient to set the water in motion, a certain amount of water will be picked up and carried into the producing string, and due to the decrease in the velocity of the gas as it approaches the top of the hole, caused by friction in the producing string and the increased weight of the column of gas on account of the water carried in suspension, a certain amount of water falls back to the bottom of the hole and soon covers the face of the sand, and sooner or later retards the flow or completely drowns out the gas. It is also believed that other serious conditions are caused by too low pressures in or at the face of the pay sand, i.e., that of the partial or total collapsing of the sand caused by a sudden drop in pressure or the continuance of low pressures on a sand that has a shut-in pressure of 600 to 800 pounds. Also, water seepage and cavings from unprotected formations above are more likely to start.

Until recent years it was the custom to use 2-inch tubing almost exclusively in all gas wells. It has now been found that when a well's production is retarded by water, oil or cavings, it is almost impossible to clean out such wells through this small size tubing. It then becomes necessary to move in a large cleaning out machine and pull the tubing and packer in order to clean out. In a number of cases this is a very difficult job for the reason that when the small string of tubing begins to deteriorate, it is generally caused by corrosion which starts at the top or point where the cavings, oil and water rise and settle. Invariably when pulling on the packer the tubing parts at this point and it becomes a very expensive cleaning out job, in fact necessitating at times the plugging of the well.

Maintenance of Small Gas Wells

The following are some of the diffi-

(Continued on Page 88)

*Before American Petroleum Institute, Pittsburgh, Pa.

Way Cleared for Trial of Lone Star Rate Case

AUSTIN, Tex., June 4.—The way was cleared in Travis County District Court Saturday for immediate trial of the State's suit to compel the Lone Star Gas Co., wholesaler of gas to more than 250 Texas cities and towns, to abide by a 20 per cent rate reduction ordered by the Texas Railroad Commission.

Dismissal of the suit by Judge W. F. Robertson of the One Hundred Twenty-sixth District Court for lack of jurisdiction was urged by company attorneys.

Elmer F. Schmidt of Dallas, general superintendent of the company, testified 30 per cent of the gas delivered by the Lone Star in 1933 came through lines in Oklahoma. Three of the company's lines tap Oklahoma fields and a fourth runs through Oklahoma to the Texas Panhandle producing area, he said. Karl F. Griffith of Dallas, general counsel, testified concerning corporate relationship of various companies in the Lone Star Gas system.

District Judge W. F. Robertson of the state court overruled the general demurrers, pleas of abatement and general exceptions directed against the suit by company attorneys. The legal attacks were based on a contention the company's business was interstate, as gas served Texas towns came, in part, from Oklahoma fields. Jurisdiction of a state court in the litigation was challenged.

The court held the percentage of the company's gas coming from Oklahoma was so small that its comingling with Texas gas was insufficient to characterize its distribution in this state as interstate commerce.

PARSONS GAS PLANT VOTE

PARSONS, Kans., June 4.—The city commissioners have placed on first reading an ordinance calling for an election on a $275,000 bond issue for the construction and operation of a municipal gas plant. The election would be held in connection with the primary in August.

Two years ago Parsons voters rejected a $325,000 bond issue following a campaign in which Doherty interests, according to Mayor Alfred Coad, promised that the Union Public Service Co. would make an adjustment in its rates. The domestic rate here is $1.25 for the first thousand feet and 50 cents for all above.

DELAYS GAS BOND PAYMENT

CHICAGO, June 4.—Because an Ohio Supreme Court decision upholding rate reductions will require the West Ohio Gas Co. to make large refunds to consumers, the company will not pay coupons due June 1 on its first and refunding mortgage gold bonds. John N. Shannahan, president, said the company would take advantage of the 60-day grace period provided in the mortgage. The Supreme Court decision will be appealed to the U. S. Supreme Court, Mr. Shannahan said.

GAS FOR KENTUCKY TOWNS

BOWLING GREEN, Ky., June 4.—Nine towns will be furnished gas by the Kentucky Public Service Co. under plans approved by company officials. Elizabethtown, Hodgenville, Bardstown, Cecilian, Vine Grove, Buffalo, Springfield, Lebanon and New Haven will be furnished gas by the construction of a pipe line 126 miles in length. Construction will be started soon by the company, which owns the franchises in the various towns. The gas will be obtained in the Sonora and Bonnieville Field.

General Market Tone in Chicago Area Continues Good and Even Optimistic

By SPECIAL CORRESPONDENT

CHICAGO, June 4.—While the recent improvement in tank car gasoline prices has been slower and smaller than hoped for in May, the general market tone remains good and refiners are hoping for an intensification of the advance. The buying policy of refiners in June is regarded as one of the important factors. All the ground gained in the process of restoring tank wagon and service station prices to normal in several important districts in the past two weeks is being held. Moreover, the trend is increasing. The Chicago movement, started by the Chicago Individual Brand Petroleum Association, at the beginning of the week, was in furtherance of this movement.

Generally over the central states territory, gasoline consumption is not only good but in some sections is equalling the best levels. However, this situation is not universal. The heat has brought out an extremely large number of cars and they are consuming gasoline. But in some predominantly rural regions, notably the northwest, the heat is having a different effect. Drought conditions are acute in the Dakotas, western Minnesota and northern Iowa. They are reducing gallonage in some cases by 25 per cent. Moreover, with little relief in sight from conditions even though rains do come, leading oil marketing companies of the region are trying to work out plans for curtailing their operations. Some tank wagon routes have been curtailed or eliminated, and some service stations have been given up by local sellers. Majors are trying to turn stations over to local interests in some cases. Farmers are unable to buy fuel for either tractors or automobiles in many cases and are not taking them out. Some observers fear that even with rains now, conditions have reached such a point many rural buyers of petroleum products will be financially crippled for a long time.

In most of the other central territory the long rainless spell is being felt but it has not reached anything like these proportions. City traffic and highway travel are at high levels. The second world's fair is bringing in large numbers of tourists and making gasoline business in and around Chicago good.

Kerosene

The rural region conditions which have disturbed gasoline business to some extent also are being felt a little in kerosene which is quite spotty and irregular. While prices are not greatly lower than in the past two weeks, the consumption is not reaching the levels hoped for and it is believed only the limited supplies of material are keeping the price structure in fair shape. Tank wagon kerosene market conditions are a little better in quite a number of small rural district regions.

Distillates

Many refiners hesitate to treat their distillate to make it into kerosene at volume of distillate offers. Prices seem to be in fair position. Distributors are present, and the result is rather liberal jockeying for contracts covering their next winter needs, but few refiners wish to tie themselves up on definite tops. Some are willing to sell on publication prices.

Fuels

Despite strike threats in steel, large consumers of fuel in that and related lines are taking fairly good volume of heavy products and prices are all that might be expected. There is little surplus fuel or gas oil in the Chicago refining community and there is little selling ahead. The zero fuels and gas oils likewise are closely held, and show no particular change.

Naphthas

Naphtha business has shown itself fairly steady and continues to make a good comparison with a year ago both in prices and in volume of orders.

Waxes

Although prices of waxes are considered to have reached relatively high levels interest in the various items continues active. Inquiries are brisk.

Petroleum coke is seasonally quiet.

Crude Oil Prices

(Continued from Page 31)

Effective September 29 in Salt Flat by Shell Petroleum Corp.

Rocky Mountain States

Ilea, light (Sept. 29, 1933)	$.96
Ilea, heavy (Sept. 29, 1933)	.80
Florence, Colo. (June 17, 1933)	.30
Fort Collins and Wellington, Colo. (June 17)	(See Salt Creek prices)
Big Muddy (Sept. 29, 1933)	1.01
Frannie, light (May 1, 1934)	.70
Frannie, heavy (Sept. 29, 1933)	.62
Salt Creek and LaBarge (Sept. 9, 1933)	
See Stanolind Mid-Continent price schedule	
Grass Creek, light (Sept. 29, 1933)	1.18
Grass Creek, heavy (Dec. 15, 1932)	.45
Elk Basin (Sept. 29, 1933)	1.18
Rock Creek (Sept. 29, 1933)	1.02
Dutton Creek (July 8, 1933)	
See Mid-Continent gravity prices	
Lance Creek (Dec. 16, 1932)	.92
Poison Spider (Mar. 5, 1931)	.70
Hudson (June 2, 1931)	.65
Lander (Mar. 5, 1931)	.40
Rex Lake (Feb. 22, 1930)	1.10
Osage	1.08
Lost Soldier (Sept. 30, 1933)	.83
Hamilton Dome (Dec. 16, 1932)	.35
Torchlight (Sept. 29, 1933)	1.18
Greybull (Sept. 29, 1933)	1.18
Pondera	1.15
Sunburst (Sept. 29, 1933)	1.35
Cat Creek, Montana	1.07
Hogback (Sept. 29, 1933)	1.11
Lea County, N. Mex. (Sept. 29, 1933)	.75
Maljamar (Sept. 29, 1933)	.70
Artesia-Jackson (Dec. 1, 1933)*	.75

Note—Salt Creek, Torchlight, Elk Basin, Grass Creek, Frannie, Greybull, Hogback and Iles by Stanolind Oil & Gas Co. Elk Basin, Grass Creek light, Big Muddy, Rock Creek and Sunburst by Ohio Oil Co. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective September 29, 1933, by Humble Oil & Refining Co. and other buyers; Fort Collins, Wellington, Orchard, Florence, Big Muddy, Cat Creek, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro.

*Continental Oil Co.

North Louisiana and Arkansas

Smackover, Ark. (all grades)	$.70
Tullos-Urania, La. (Jan. 13, 1934)	.87
Nevada, Ark. (Sept. 29, 1933)	.60
East El Dorado (Sept. 29, 1933)	.70
Converse, La. (Mar. 17, 1934)	1.03
Elm Grove, La. (Sept. 29, 1933)	.75
Holly, La. (Mar. 17, 1934)	1.03
Pleasant Hill, La. (Mar. 17, 1934)	1.03
Zwolle, La. (Mar. 17, 1934)	1.03
Champagnolle, Ark. (Mar. 17, 1934)	.81
Lisbon, Ark. (Mar. 17, 1934)	1.03
Stephens, Ark. (Sept. 29, 1933)	.70
Urbana, Ark. (Mar. 17, 1934)	.60
Other fields	(See gravity table)

Note—Smackover: Effective September 29, 1933, Texas Co., Magnolia Petroleum Co., Standard of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co. and Phillips Petroleum Co. East El Dorado posted by Magnolia Petroleum Co. and Gulf Refining Co., Nevada by Standard Oil Co. of Louisiana. Urania posted by H. L. Hunt, Inc., and Louisiana Oil Refining Co. Converse, Holly, Zwolle and Urbana by Standard Oil Co. of Louisiana; Elm Grove by Simmons Oil & Refining Co.; Pleasant Hill by Standard Oil Co. and Magnolia Petroleum Co.; Champagnolle by Standard Oil Co. and Lion Oil & Refining Co.

Eastern States

TIDE WATER PIPE CO.
(Effective May 1, 1934)

Bradford, Pa.	$2.55
Allegany, N. Y.	2.55

SOUTH PENN OIL CO.
(Effective May 1, 1934)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field)	2.55
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2.32
Pennsylvania Grade Oil in Eureka Pipe Line lines	2.17
Pennsylvania Grade Oil in Buckeye Pipe Line lines	2.07
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Oct. 2, 1933)	1.82

PENNZOIL CO.
(Effective May 1, 1934)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	$2.47
Includes Cochran, Franklin, Hamilton and Doolittle districts.	
Group B	2.46
Includes Titusville district.	
Group C	2.46
Includes Turkey and Tidioute districts.	
Group D	2.44
Includes Bear Creek and Porkey districts.	
Group E	2.42
Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson Kennerdell, Emlenton, Tiona, Lacy and Kinzua districts.	
Price depends on length of pipe line haul to plant at Oil City.	

PURE OIL CO.
(Effective May 1, 1934)

Cabin Creek, W. Va.	$2.17
Bradford Hollow, W. Va.	2.17
Kelly Creek, W. Va.	2.17

Middle Western States

OHIO OIL CO.
(Effective September 29, 1933)

Lima	$1.30
Illinois (Jan. 5, 1934)	1.13
Princeton, Ind. (Jan. 5, 1934)	1.13
Plymouth	Shut in
Western Kentucky	1.18
Midland, Mich. (Sept. 30, 1933)*	1.03
Oceana, Mich. (Oct. 5, 1933)	.90
Somerset, Ky. (Sept. 30, 1933)	1.23
Hart County, Ky. (Oct. 1, 1932)	1.18

*Posted by Pure Oil Co. Producers Pipe Line Co. pays 5 cents per barrel over Pure Oil Co.'s posted price. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and posted price includes premium. Hart County, Kentucky, crude purchased by Stoll Refining Co. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co.

Canada

Ontario (September 9, 1933):	
Petrolia*	$2.10
Oil Springs	2.17
Turner Valley (May 21, 1934):†	
Clear naphtha	$2.55
Discolored naphtha	2.31
Crude oil, 50 gravity	2.19
Crude oil, 45 to 49.9	2.07
Crude oil, 40 to 44.9	1.80

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Mexico

Panuco*	89½

*F.o.b. ship, based on March transactions and exclusive of production and export taxes and bar dues.

California Crude Oil Prices

STANDARD OIL CO OF CALIFORNIA

(Effective September 6, 1933)

For current purchases of crude oil at the well (unless otherwise specified). (All gravities above those quoted take highest price offered in that field.)

Gravity—	Long Beach	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier, La Habra	Montebello	Santa Fe Springs	La Habra-Coyote	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Coalinga	Coyote
offered in that field.)																	
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	....	$.65	$.65	$.65	$.65	....	$.65	$.57	$.57	$.57	$.65
15-15.9	.65	.65	.69	.69	.66	.69	....	.66	.65	.65	.65	....	.65	....	....	....	.65
16-16.9	.66	.65	.72	.73	.69	.73	....	.69	.67	.68	.65	....	.65	....	....	....	.65
17-17.9	.69	.65	.75	.76	.73	.76	....	.72	.70	.71	.65	....	.68	....	....	....	.68
18-18.9	.72	.65	.78	.80	.76	.79	....	.75	.74	.74	.65	....	.71	.61	.61	.59	.71
19-19.9	.75	.65	.81	.83	.80	.82	....	.78	.78	.78	.65	....	.74	.64	.65	.62	.74
20-20.9	.78	.68	.83	.87	.83	.85	....	.81	.82	.81	.66	....	.78	.67	.69	.65	.78
21.21-9	.81	.72	.86	.90	.87	.88	....	.82	.85	.84	.69	$.72	.81	.70	.73	.68	.81
22-22.9	.84	.76	.89	.94	.90	.92	....	.85	.89	.87	.72	.76	.84	.73	.76	.72	.84
23-23.9	.88	.81	.92	.97	.94	.95	$.83	.89	.93	.90	.76	.79	.87	.77	.79	.75	.87
24-24.9	.91	.85	.95	1.01	.97	.98	.86	.92	.97	.93	.80	.83	.90	.81	.82	.78	.90
25-25.9	.94	.89	.98	....	1.00	1.01	.90	.95	1.00	....	.85	.87	.93	.85	.85	.81	.93
26-26.9	.97	.93	1.01	....	1.04	1.04	.94	.98	1.04	....	.89	.90	.96	.89	.88	....	.96
27-27.9	1.00	.98	1.04	....	....	1.07	.97	....	1.08	....	....	.94	.99	.93	.91	....	.99
28-28.9	1.03	1.02	1.07	....	....	1.10	1.01	....	1.11	....	....	.98	1.02	.97	.94	....	1.02
29-29.9	1.06	1.05	1.09	....	....	....	1.04	....	1.15	....	....	1.01	1.05	1.01	.97	....	1.06
30-30.9	1.09	1.10	1.12	....	....	....	1.08	....	....	....	....	1.05	1.09	1.05	1.00	....	1.09
31-31.9	....	....	....	....	....	....	1.12	....	....	....	....	1.08	1.12	1.09	....	....	1.12
32-32.9	....	....	....	....	....	....	1.15	....	....	....	....	1.12	1.15	1.13	....	....	1.15
33-33.9	....	....	....	....	....	....	....	....	....	....	....	1.16	1.18	1.17	....	....	1.18
34-34.9	....	....	....	....	....	....	....	....	....	....	....	1.19	1.21	....	....	....	1.21
35-35.9	....	....	....	....	....	....	....	....	....	....	....	1.23	....	....	....	....	....
36-36.9	....	....	....	....	....	....	....	....	....	....	....	1.26	....	....	....	....	....
37-37.9	....	....	....	....	....	....	....	....	....	....	....	1.30	....	....	....	....	....
38-38.9	....	....	....	....	....	....	....	....	....	....	....	1.34	....	....	....	....	....

Additional Standard Oil Quotations

Elwood Terrace—F.o.b. ship, 32 degrees, $1.03; 34 degrees, $1.06; 35-35.9, $1.09; 36-36.9, $1.12; 37 degrees and over 1.15.

Newhall—14 degrees and over, 57 cents.

McKittrick and Kern River—14 degrees and over, 57 cents.

Wheeler Ridge—14 to 17.9 degrees, 57 cents; 18-18.9, 58 cents; 19-19.9, 61 cents; 20-20.9, 64 cents; 21-21.9, 67 cents; 22-22.9, 70 cents; 23-23.9, 73 cents; 24-24.9, 76 cents; 25 degrees and over, 79 cents.

Kettleman Hills—33-33.9 degrees, 93 cents; 34-34.9, 96 cents; 35-35.9, 99 cents; 36-36.9, $1.02; 37-37.9, $1.05; 38-38.9, $1.08; 39 degrees and over, $1.11.

The Texas Co. posted in **Shiells Canyon, South Mountain and Santa Paula** as follows: 14 to 17.9, 57 cents; 3 cents added for each degree up to and including 26-26.9 degrees at 84 cents; then 4 cents added for each degree up to and including 30 degrees and over at $1. Company posts Standard Oil Co.'s Montebello prices in Montebello and North Whittier, and posts Standard Oil Co. prices in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield and Santa Fe Springs, all effective September 6.

General Petroleum Co. posts Standard Oil Co. prices in Athens, Rosecrans and Signal Hill; Alamitos Heights up to 26-26.9; Santa Fe Springs up to 35-35.9; Richfield up to 35-35.9; Brea Canyon and Olinda up to 25-25.9, and Torrance up to 35-35.9.

Union Oil Co., effective September 6, posts same price as Standard Oil Co. in all fields in which both purchase, excepting that in Athens-Rosecrans, Union Oil Co. posts 21-21.9, 72 cents, and 33-33.9, $1.18; 34-34.9, $1.21, and 35-35.9, $1.24.

Associated Oil Co., effective September 6, posted same prices for the same grades as Standard Oil Co. of California, excepting that in some fields its gravity scale stops as follows: Huntington Beach, 26 degrees and over; Seal Beach and Alamitos Heights, 26 degrees and over; Coyote Hills, 23 degrees and over; Richfield, 25 degrees and over; Torrance, 25 degrees and over; Inglewood, 24 degrees and over; Santa Fe Springs, 35 degrees and over; Midway-Sunset, Elk Hills, Buena Vista Hills, 30 degrees and over. Also Associated pays 52 cents for oil of 11 to 13.9 gravity in McKittrick, Kern Front, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills and Coalinga.

PERSONAL PARAGRAPHS

H. L. LANE, vice president, Crown Central Petroleum Corporation, Houston, Tex., has returned from a business trip to Chicago, Ill.

* * *

F. N. SPELLER will represent the American Society for Testing Materials at the Pittsburgh, Pa., meeting of the American Association for the Advancement of Science at the end of December.

* * *

GORDON GRIFFIN, formerly in charge of the engineering department for the Texas Railroad Commission at Kilgore, is to be married on June 15 to MISS ERMA HILL of Coleman, Tex.

* * *

CHARLES BURTON REEVES, with the Continental Oil Company, Wichita Falls, Tex., was married to MISS BEVERLY BERNADINE CALHOUN of that city, in Walters, Okla., on May 15.

* * *

SIR JOHN CADMAN, G.C.M.G., chairman of the Anglo-Persian Oil Company, has been appointed vice chairman of the commission set up by the British government to investigate certain aspects of television and to advise the postmaster-general.

* * *

GUILFORD SHAW TURNER, JR., vice president and sales manager of the Old Dutch Refining Company, of Muskegon, Mich., and MISS ELLEN DUDLEY MILLER, of Cincinnati, Ohio, have announced their engagement. Mr. Turner attended Northwestern and Wisconsin Universities and has been associated with the Old Dutch company for about two years. The wedding will take place in September. Mr. Turner is the son of MR. and MRS. GUILFORD SHAW TURNER, of Berwyn, Ill., while Miss Miller is the daughter of HENRY MILLER, of Cincinnati and Newport.

* * *

E. M. CARTER, consulting engineer, Wichita Falls, Tex., was in Tulsa for a few days early this week.

* * *

JOHN R. SUMAN, vice president of the Humble Oil & Refining Company, Houston, Tex., has been visiting in the East.

* * *

G. ELIAS, production superintendent of the Phoenix Oil & Transport Company, Rumania, was a visitor in Tulsa last week. He is now on his way to California.

* * *

C. W. HANLEY, combination scout and lease man for the Gulf Production Company, Fort Worth, Tex., is spending a few days in Houston, Miss., where he and his family motored to visit relatives.

* * *

HOLT McWORKMAN, who has been representing the S. M. Jones Company in West Texas, is now also representing the Petroleum Equipment Company of Fort Worth, Tex., with headquarters in Midland, Tex.

* * *

GEORGE FREDERICKSON, long a director in the Oklahoma Natural Gas Corporation, has been made vice president of the company in charge of public relations for the western division with headquarters in Oklahoma City, Okla.

* * *

CLYDE M. BENNETT, vice president in charge of the land and geological departments for the Magnolia Petroleum Company, Dallas, Tex., and family are motoring to Morgantown, W. Va., to attend the twenty-fifth annual commencement exercises of his alma mater, the University of West Virginia.

EDWARD L. ESTABROOK has been elected a director and vice president of the Creole Petroleum Corporation, Standard Oil Company of New Jersey subsidiary.

* * *

PAUL D. TORREY, consulting geologist, senior partner of Torrey, Fralich & Simmons, of Bradford, Pa., wil marry MISS HAZEL THOMAS, of Pittsburgh, Pa., in July.

* * *

R. PAUL HUGGINS, Western Gulf Oil Company; FERO WILLIAMS, George F. Getty, Inc., and FRANK JONES, Middle Dome Oil Corporation, were recently elected directors of the Los Angeles Petroleum Accountants Society.

* * *

HUGH B. MARTIN, a graduate of Stanford University and for several years in the engineering department of the Standard Oil Company and for some time with the Continental Oil Company, has been appointed general manager of the Graham & Loftus Oil Corporation. Other officers of the corporation include RICHARD BARD, president; CHARLES C. PERKINS, vice president, and MILTON TEAGUE, HARLAND GRAHAM, and WILLIAM LOFTUS, directors.

* * *

C. T. LONGCROFT has recently arrived in London, England, to take up duties as assistant manager in the London office of the Oil Well Supply Company. For the past eight years he has represented the company in Rumania, where he acquired valuable experience in general field operations in that country. H. G. AUSTIN, who has for many years been attached to the London office of the Oil Well Supply Company, has succeeded Mr. Longcroft in Rumania.

R. W. WHITE is now treasurer of the Union Carbide & Carbon Corporation.

* * *

D. J. TONKONOGY has returned from several months' professional work in Russia, in connection with natural gas.

* * *

E. G. LEONARDON, of Paris, France, has arrived in Houston, Tex., to take charge of the Schlumberger work on the Gulf Coast.

* * *

THOMAS I. DICKSON has left New York and is now at Kilgore, Tex., with the Shell Petroleum Corporation.

* * *

C. C. IRISH, a director of the Standard Franco-Americaine de Raffinage, and of other Standard of New Jersey interests in France, has been decorated with the Order of Chevalier of the Legion of Honor by the French government.

* * *

DAVIDS S. JACOBUS, advisory engineer for the Babcock & Wilcox Company and an A.I.M.E. member for 46 years, has been elected president of the American Welding Society for the coming year. JOHN J. CROWE, engineer in charge of research and development for the Air Reduction Sales Company, will be senior vice president of the society.

* * *

J. FABER HANST, oil and gas engineer, Chicago Pneumatic Tool Company, has returned to New York after an absence of five months, during which time he made a study of conditions in the oil and gas fields of Rumania, Poland, and Germany for his company. In addition he spent considerable time in the British Isles, Holland, Belgium, and Austria.

* * *

DAVID FRAME, general superintendent of the Humble Oil & Refining Company, Houston, Tex., has returned from a trip to the East.

* * *

PAUL YOUNGMEYER, a graduate in geology from the University of Wichita, Kans., is now in the Kansas land office of the Texas Company, at Wichita.

* * *

JOE HEMPHILL has been assigned to the scouting department of the Magnolia Petroleum Company for the West Texas district, and will have headquarters at Midland, Tex.

* * *

GEORGE FOX, secretary and assistant to B. E. HULL, president of the Texas Pipe Line Company, Houston, Tex., is back at his office following an emergency appendicitis operation.

* * *

C. E. BARNHART, a pioneer in the oil business in the Mid-Continent area, will soon assume the position of field manager of the McBarn Oil Company in the development of a government permit at Aztec, N. Mex.

* * *

W. J. DYKEMAN, JR., with the Stanolind Oil & Gas Company, Tulsa, and formerly in charge of the accounting department of the company at Fort Worth, Tex., has been spending a few days in South Texas and Fort Worth.

* * *

R. B. HIGH, manager of the manufacturing department, Shell Petroleum Corporation, St. Louis, Mo., spent several days in Houston, Tex., visiting the company's refinery there. Mr. High, until several months ago, was superintendent of the Houston refinery.

DO YOU REMEMBER?

From The Oil and Gas Journal Files

25 Years Ago

June 9, 1909

Oklahoma's oil production in May, based on pipe line runs, was 113,954 bbls. per day. Tank car shipments added about 12,000 bbls. to the amount, making a total of 125,954 bbls. per day.

John O. Mitchell, an oil man, is mayor of Tulsa.

An extensive leasing campaign is going on in Bryan County, Oklahoma.

The Algerine Oil Co. is drilling for oil or gas in the New Orleans, La., city limits. Only two rock strata were found down to 1,710 feet where pipe was set, one stratum 12 inches thick and the other 6 inches thick.

20 Years Ago

June 11, 1914

The number of wells completed east of California in May broke all records. The total was 2,599.

Rogers Kemp, Tulsa oil man, donates $25,000 to Kendall College in Tulsa. It is the largest recorded donation by an individual to an Oklahoma institution.

The Canadian postoffice department is on the trail of fake oil company promoters operating out of Calgary, Alberta.

Edward O'Neill, of the well known O'Neill family of oil operators in Texas, dies in Houston.

Osage County, Oklahoma, produced 64,000,000 bbls. from 1906 to 1913, both inclusive. The richest pool thus far discovered is the Boston Pool in Section 1-21-7. Wells completed in the county include 10,102 oil wells, 695 gas wells and 3,975 dry holes, a total of 14,772.

10 Years Ago

June 5, 1924

Empire Gas & Fuel Co. has entered the California Field and will drill its first well in Section 4-11-23, Kern County.

United North & South Oil Co. is advertising its Luling, Tex., properties for sale. The company has 121 producing wells averaging 30,000 bbls. per day, and 21,000 acres of leases. The company is owned, mostly if not altogether, by Edgar B. Davis, a retired rubber millionaire and formerly president of the United States Rubber Co.

A new rotary drilling record for deep wells is established in California. A depth of 7,212 feet was reached in the Santa Fe Springs Field.

A. S. BAILEY, vice president of the Texas Pipe Line Company, Houston, Tex., spent several days in Shreveport, La.

* * *

M. C. McGEHEE, JR., secretary of the Alamo Oil Company, Houston, Tex., has been confined to the hospital for an appendicitis operation.

* * *

W. F. KNODE, chief engineer for the Texas Railroad Commission, Austin, has resigned and has taken a position with the Southern Alkali Company of Corpus Christi, Tex.

* * *

HARRY C. WIESS, vice president of the Humble Oil & Refining Company, Houston, Tex., and MRS. WIESS attended the graduation exercises for their daughter at Ethel Walker School, Simsbury, Conn.

* * *

C. P. PARSONS, field engineer of the Halliburton Oil Well Cementing Company, of Duncan, Okla., addressed more than 200 producers, contractors and field men on oil well cementing methods in a meeting last week in Mount Pleasant, Mich.

* * *

H. N. SEEVERS, of Corpus Christi, Tex., geologist for the Atlantic Oil Producing Company, was the principal speaker at the monthly geologists meeting at the San Antonio Petroleum Club. Mr. Seevers read a paper on the geology of the Greta Field in Refugio County.

* * *

DR. FRANK LEVERATT, University of Michigan authority in glacial geology, directed more than 60 Michigan geologists on the annual field trip of the geology and mineralogy division of the Michigan Academy of Science, studying glacial formations in the Thumb region last week. Traverse and Dundee outcrops will be studied on the next annual trip.

* * *

MARVIN LEE, technical advisor to the Kansas Corporation Commission, has gone to Washington, D. C., to assist governmental authorities in their fight for an oil control law.

* * *

PAUL KING, formerly manager of the Wichita and McPherson, Kans., stores of the Republic Supply Company, has been transferred to Tulsa where he will contact the oil companies located there.

* * *

J. A. BROWN, chairman of the executive committee of the Socony Vacuum Oil Company, and H. F. SHEETS, a member of the executive committee and president of the Vacuum Oil Company, Inc., left New York City, June 1 on the Europa of the North German Lloyd. They will visit European points.

* * *

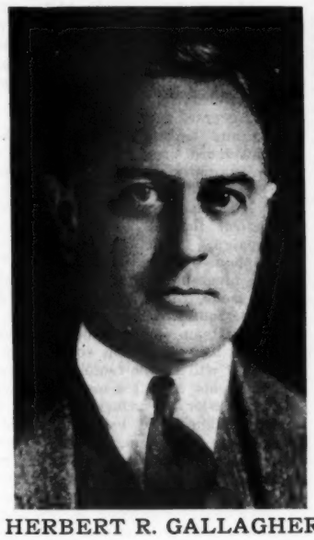
CARL M. SMITH, field representative in the Panhandle Field of Northwest Texas, has been made regional land man, and he is being succeeded as field man by R. R. RANSOM, who has been field man in Arkansas. DONALD W. LEE, who has been in the gasoline construction department of the production division at Cunningham, Kans., succeeds Mr. Ransom at Eldorado.

* * *

GEORGE GORDON CRAWFORD, who has resigned as president of Jones & Laughlin Steel Corporation, will continue as a director and a member of the executive committee, and will also serve in an advisory and consulting capacity. Prior to assuming the presidency in February, 1930, Mr. Crawford had been president of the Tennessee Coal, Iron & Railroad Company. He was assistant superintendent of the Edgar Thomson blast furnaces of the Carnegie Steel Company from 1895 to 1897, superintendent of the blast furnace and steel works of the National Tube Company at McKeesport, Pa., for the next two years, and then superintendent of the Edgar Thomson blast furnaces for two years. He was manager of the tube works and plants of the National Tube Company, when he was transferred to Birmingham, Ala., in 1907.

Active on Pacific Coast 20 Years

Herbert R. Gallagher, president of the Consolidated Oil Corporation, is rapidly becoming as widely known in oil circles of the East and Middle West as he was in the western part of the United States for many years. He became a senior officer of the Consolidated in 1932 and moved his headquarters to New York after spending more than 20 active years in Pacific Coast operations. He was born in Hamilton, Canada, in 1883, and previous to entering the oil business was in charge of California properties for his family.



HERBERT R. GALLAGHER

Mr. Gallagher became the senior vice president of the Shell Company of California, now the Shell Oil Company of California, in 1910 at the time the Shell interests first became a factor in West Coast operations. He had an important part in the steady expansion of operations which within a few years placed it in second position on the Pacific Coast in production, refining and marketing.

At first the Shell operations were confined to marketing. It entered the production end in 1913 and then built and acquired refineries and pipe lines until the company became a well-balanced and integrated organization. Mr. Gallagher was closely associated with all phases of its operations.

In 1932 when the properties of the Prairie companies were consolidated with those of Sinclair interests in the formation of one of the largest units of the oil world, Mr. Gallagher was chosen president of the parent company and moved his headquarters from San Francisco to New York. He has been a director of the American Petroleum Institute for several years and has been active in the work of the oil industry centering in Washington, serving on several committees.

WILLIAM L. WALKER, distributor for the Tulsa Oil Thief Instrument Company, is on a trip to the Pennsylvania and New York oil fields.

* * *

M. D. LEH, Oregon division manager, has been appointed assistant general sales manager of the General Petroleum Corporation, succeeding RALPH G. BOWMAN, who recently resigned.

* * *

RALPH VAN MATRE, vice president of the Mid-Continent Pump Supply Company, a subsidiary of the Pacific Pump Works of Los Angeles, Calif., is in Los Angeles on a short business trip.

* * *

J. R. BRANNAN, of the Petroleum Heat & Power Company, New York City, has been elected president of the Fuel Oil Association, Inc. He succeeds SAM SELTZER, of the Sylvestre Oil Company.

* * *

JAMES ROSS HENDERSON and MISS HESPERIA LEE AYLSWORTH, both of Calgary, Alberta, announce their marriage to take place in June. Miss Aylsworth has been for several years connected with the Canadian Western Natural Gas, Light, Heat & Power Company, of Calgary, as home economics advisor.

* * *

WESLEY W. MOORE will advance to position of district superintendent with the establishment of new district by the Texas Company in New Mexico and Colorado. Probable district headquarters will be in Hobbs, N. Mex., or Denver, Colo. Mr. Moore formerly held the position as division petroleum engineer with headquarters at Wink, Tex.

* * *

JOHN D. ROCKEFELLER, SR., returned to his Lakewood, N. J., estate last week after spending four months at Orlando, Fla. His health improved during his Florida visit and he walked to his automobile from the train on his arrival without assistance. He will be 95 years old on July 8. Mr. Rockefeller said: "I have had a very pleasant winter, and I am much improved. I am very grateful for the kind treatment of everybody and I hope to return early in the autumn."

ANDREW C. TEMMEL, engineer with the National Tube Company, Tulsa, welcomed a 6-pound boy, Decoration Day.

* * *

GEORGE W. STRAKE, independent oil man, Houston, Tex., and discoverer of the Conroe Field, has returned from a trip to Washington, D. C.

* * *

WILLIAM HESLER, who received his master's degree in petroleum engineering at the University of Michigan, has joined the laboratory staff of the Old Dutch Refining Company, it was announced by JOHN BORDEN, president of the company.

* * *

J. L. MATHIEU, manager of the Schlumberger Electrical Prospecting Company, Houston, Tex., discussed "Electrical Coring and Its Practical Application," before the East Texas Chapter of the American Petroleum Institute production division at Kilgore, Tex.

* * *

M. N. (DUCK) AITKEN, identified with the distribution of industrial process controls for the Mason-Neilan Regulator Company in Chicago and Philadelphia the past several years, has joined the staff of the Maintenance Engineering Corporation, Houston, Tex., serving in a sales engineering capacity.

* * *

HOWARD VAN ZANDT, agent for the Texas Railroad Commission in the Conroe Field, Montgomery County, and who recently received instructions transferring him to East Texas, will remain at Conroe. His retention at Conroe was requested in a petition of operators in the field. H. G. CAMP, recently deputy supervisor in charge of conservation in the Longview district of the East Texas Field, has arrived in Houston. He will work in the Conroe Field.

* * *

A. BEEBY THOMPSON, consulting engineer, has returned to London, England, following a visit to oil fields in Rumania, near Vienna, and to the properties of Mosul Oilfields, Ltd., in Iraq.

* * *

E. S. BLEEKER, geologist for the Gulf Companies, returned to his New York office after several weeks in eastern Venezuela and Colombia, on the Barco concession.

* * *

N. D. GILLETT is now superintendent of the Superior lake bulk plant of Standard Oil Company (Indiana), succeeding J. F. CULLEN. DREWES VALK, JR., succeeding Mr. Gillett as superintendent at Muskegon lake bulk plant.

* * *

MISS JUNE REYNOLDS, for nine years secretary to A. L. BEEKLY, chief geologist of the Mid-Continent Petroleum Corporation, has resigned and has started for Boston, Mass., to make her future home. She is succeeded by MISS ELINOR SCHERF.

* * *

W. M. (BILL) COMBS, formerly at Shreveport, La., is now in charge of the Tulsa offices of the Walworth Company. P. B. (PHIL) MILLER will cover refineries in the Oklahoma-North Texas areas, working out of the Tulsa and Dallas, Tex., offices.

* * *

SAMUEL E. HACKETT, vice president in charge of sales, Jones & Laughlin Steel Corporation, has been elected president of the company as of June 1, to succeed GEORGE GORDON CRAWFORD, who has resigned that office as of May 31. Mr. Hackett for 17 years served in a purchasing capacity with the Joseph T. Ryerson & Son, Inc., Chicago. He severed that connection to become manager of the Chicago warehouse of the Jones & Laughlin company, and January 1, 1919, was transferred to Pittsburgh, Pa., as general manager of sales. He was elected a director in 1922, and, with the reorganization on January 1, 1924, and the change from Jones & Laughlin Steel Company to Jones & Laughlin Steel Corporation, he was elected vice president.

Care and Operation of Small Gas Wells

(Continued from Page 84)

culties to be overcome in the maintenance of small gas wells:

Accumulation of salt water and the subsequent salting of the face of the sand and the tubing.

Accumulation of paraffin.

Cavings from upper sands, shales and clays.

Leakage from poorly set casing strings and packers.

Faulty strings of tubing.

The following are some of the methods in use at the present time to overcome the difficulties in maintenance mentioned above, together with a detailed statement of each method:

Holding proper back pressure.
Swabbing by hand or machine.
Bailing out.
Pumping.
Siphoning.
Shooting.
Cleaning out, recasing and retubing.

Holding Proper Back Pressure

By holding the proper back pressure on the producing sand, the differential pressure drop in and at the face of the sand is reduced, which retards the flow of salt water, and thereby minimizes the salting and clogging of the face of the sand, and the tubing string and also the collapse of the sand.

Swabbing

Hand swabbing is a very effective and economical method of removing water or oil from gas wells, and especially so where there is enough rock pressure to assist in lifting the water column out of the hole. The equipment for hand swabbing consists in a small table-like frame on which is mounted a reel with sufficient wire line to reach the bottom of the hole, an ordinary swab being attached to the end of the wire line. The reel is equipped with a crank handle on each side for manual operation by two men. The hand swab is generally used on isolated wells where it would be difficult to transport the larger type machines.

Bailing or Swabbing Out Machine

There are so many and varied types of these machines that no attempt will be made here to describe any particular one, any more than to state that this method is much faster and less burdensome than the hand swab.

Pumping

The unit pumping method is used to great advantage in cases where it is necessary to bail or swab out a well a great number of times each year, being used particularly on old wells where the rock pressure is not sufficient to assist in raising the water column in the hole, and it has a number of advantages over the bailing out method, such as:

1. No gas is wasted while the fluid is being removed.
2. The level of the fluid can be kept below the producing sand (this not only keeps the sand from "mudding up" but also helps the well to produce its full capacity at all times).
3. The well is not inclined to cave as readily when pumped as it is when bailed.
4. Salt bridges are not so liable to form because the level of the water is at all times below the "gas pay," and is thus kept from being sprayed into the "walls" of the hole.

The initial cost (together with the carrying charges on investment) of completely equipping a gas well for pumping (it being necessary to equip each well due to the spacing between wells) is, of course, much greater than the cost of keeping a well bailed out by the ordinary methods, but at the present time experiments are being conducted with the thought of developing a portable machine and jack, to be used where the well is more accessible and such equipment will probably reduce the pumping cost materially in certain cases.

That the pumping method has proven of aid in maintaining the production of old wells is shown by the fact that one company which has a field with 222 wells, has 186 of these wells equipped for pumping. This is probably one of the oldest gas fields in the world and the wells in it have an average life of more than 30 years.

Siphons

There are two methods used in the siphoning of water off gas wells. The continuous siphon is an installation whereby the water and gas are taken out through a three-quarters inch to 1-inch string, and the water separated from the gas by an automatic separator. This is one of the most economical outfits for the removal of water from gas wells, but will work only under certain conditions. In other words, the rock pressure and volume must be sufficient to eject the water, with enough reserve pressure to deliver against varying line pressures. The intermittent siphon installation is a small string of three-quarters inch or 1-inch tubing installed inside the producing string and at regular intervals the producing string is shut in, and a back pressure allowed to build up to a pressure sufficient to lift the water out through the small string of tubing. The well is then turned back in line and produced until the water again reaches the danger point.

In a well where the face of the sand becomes clogged with salt, paraffin, or cavings, and it is found that this cannot be removed by water or gasoline, it is then necessary to move in the regular cleaning out machine, pull the tubing, and clean out in the ordinary manner, and there are also times when the face of the sand can be opened up by shooting with a small shot of dynamite, glycerin, or gelatin.

Recommendation as to Best Methods of Maintaining Small Wells

Minimum Size Tubing and Casing—Slotted Perforation.—Upon the completion of any new gas well, if it is worth keeping, it is certainly well worth while to give serious thought and study as to the best method to be used in casing and tubing same so as to prevent any serious future trouble from water, oil or cavings. If possible, the producing string should consist in casing of not less than 5⅞-inch, but in cases where it is found that tubing is absolutely necessary, then nothing smaller than 3-inch tubing should be used (in fact, any time it is found necessary to pull the old 2-inch tubing it should be replaced with 3-inch tubing in all cases) and when such tubing is used, the perforated joint should be perforated by horizontal slots one-half inch by 5 inches to 6 inches long. It has been found that this type of perforation offers much less resistance to the flow of gas and is also much less likely to become clogged with cavings or become salted up, than the type generally in use consisting in a number of small round holes in the perforated joint.

Bailing Outfit.—The old time slow and expensive horse-drawn bailing out outfit has about completely passed out of the picture, except in certain isolated districts, and its place has been taken by the more economical and up-to-date motorized bailing machine which, on account of the present splendid network of good roads, can be moved more quickly from place to place and the job completed in a more efficient and economical manner.

The most efficient equipment for this bailing out work consists in a gasoline motored bailing out and cleaning out low geared unit on a 1½-ton dual tired motor truck, capable of a road speed up to 50 miles per hour, the truck being geared low enough to carry its own load up most any grade, but where the grade is too great, the bailing out unit motor and winch can be used to assist the truck in negotiating such a grade. This bailing out unit is equipped so that it cannot only perform bailing out and swabbing jobs, but is very efficient in the necessary small amount of drilling usually accompanying cleaning out jobs and it is also so geared that in bailing out jobs, carrying a 4½-inch bailer 25 feet long, it will go in and out of a 2,000-foot hole and dump in four minutes. These machines are also equipped with the necessary small tools to clean out in the 2-inch and 3-inch tubing and 5⅞-inch and 6-inch casing.

It is recommended that in all cases of bailing out jobs, and especially in "suspected" cleaning out jobs, a portable machine of this type should be moved in and if it is found that the work cannot be done with this machine, then one need not worry about making a mistake by moving in the larger and more expensive type of cleaning out machine.

Of course, the tractor type of swabbing and bailing out machine will be found more practical in certain places and especially where the wells are more or less in bad locations but, of course, for long moves, this type would not be practical for an extensive bailing out campaign.

Siphon.—Where conditions are found to be favorable after sufficient study has been made, the installation of a siphon will be found to be more economical.

Unit Pump.—While the unit pumping method has its use in some exceptional cases, it will not be found to be practical in all fields, and as a matter of fact, one of the major operating companies in the Appalachian Field has been enabled to take care of its maintenance work on almost 2,000 gas wells, with a fleet of eight portable motorized bailing out machines of the type mentioned above.

Swabbing.—Swabbing is probably the quickest way to eliminate water from a gas well and is practical and advisable under certain conditions; that is, where the gas well is properly cased and tubed so that the swabbing will not pull in cavings from formations already in a cavey condition or start other formations to caving.

Recently, a combination swabbing outfit has been developed which would take care of any size tubing from 2-inch to 4-inch by interchangeable rubbers; in other words, such a swab will elimiunate the necessity for carrying two or three extra swab outfits.

Methods of Deciding Which Wells Should Be Cleaned Out, Bailed Out, etc.

Probably one of the most important features in the maintenance of a gas well property is the detection of "sick" wells at the proper time, the proper diagnosing of the case, and the prescribing of the proper remedy, together with the setting aside of a suitable amount in the annual budget for such work.

In the detection of these sick wells, such items as the monthly minute pressures, above line, taken from one to five minutes and the rock pressure tests are important, as they give prior warning to the well tender that something is wrong, and after conferences between the well tender, foreman and the superintendent, a recommendation is made to the main office, giving all facts regarding the case with a recommendation as to what should be done in each particular case. Of course, in order to make such a plan workable, it is necessary that a special form or forms for the various field men's reports and recommendations be put into use.

After a proper study in the main office of these field reports, together with all the past available history of each well, is made and it is decided a well should be cleaned out in order to put it back on a producing basis, such a well is then placed on the "cleaning out list," a copy of which is furnished the field superintendent. Then, after the work of cleaning out has been completed, a special test is again taken and decision made as to whether it should be continued as an active well at the present royalty, or at a reduced royalty or abandoned and plugged. While this procedure takes some time, nevertheless when it is considered that a company may have an investment of from $12,000 to $15,000 at stake in each well, it is certainly worth a little time and expense to get sufficient information to protect such capital investment.

In order to inaugurate such a maintenance plan as outlined herein, the most important feature which will make for its success or failure, is the impressing on the mind of each individual field well tender the importance of his position—that he has a property whose value, in most cases, will amount to nearly a half million dollars, under his care and for which he is individually responsible. If he is the man for the job, he will then insist that all wells which he takes care of produce to their maximum and, if not, he will see that such steps as are necessary to put his wells in good condition are taken by the proper authorities, and if he does not take such an attitude he certainly is not the proper man for the job and should be replaced.

Conclusion

In conclusion, the importance and necessity for a systematic study of all well data together with general field conditions should be emphasized. From such a study, knowledge of all the existing factors that cause small gas wells may be summed up, and an intelligent, efficient and economical plan of maintenance and operation mapped out.

The producing areas of the present gas fields of the Appalachian geosyncline are now quite definitely outlined and the fields have been thoroughly drilled up; the best that can be expected from any new drilling being nothing better than wells of small volume and low rock pressure, although it is very probable that some scattered gas fields of high volume and rock pressure (such as the recent Tioga County gas field in Pennsylvania) will be developed from time to time, but these will act only as a "temporary spurt" and cannot be depended upon to uphold production. Consequently, the "small gas wells" are the foundation upon which the future of the natural gas industry in eastern United States must be depended and if taken care of properly these small gas well will produce an abundance of gas for some years to come.

There is no question but that the time, money and effort put into a well-studied "cleaning out and bailing out campaign" on the present small gas wells will considerably increase their daily delivery capacity. In fact, the cleaning out and bailing out of small wells by one of the larger operating gas companies in the Appalachian Field during the past four years has resulted in an increase in daily open flow volume of 297 per cent per well through their cleaning out work, and an increase of 133 per cent through their bailing out work, and when it is considered that this increase in daily open flow volume costs much less than that obtained by the drilling of new wells, it certainly seems that "the care and nursing of small gas wells east of the Mississippi River" deserves serious thought and action at this time.

Wildcat Operations in Kansas

(Continued from Page 65)

Mid-Kansas O. & G. Co.'s No. 3 Proffitt, NE NW NW Sec. 5-20-9w ..... Rigging up cable tools.
Reserve Dev. Co.'s No. 1 Heinz, NE SW SE Sec. 8-18-10w. T.D. 3,269 ft.; wtr.; S.D.

ROOKS COUNTY

Seeley et al's No. 1 Doughty, C SW SW Sec. 15-8-19w.. Spudded and S.D.
Phillips Pet Co.'s No. 1 Dopita, C SW SW Sec. 31-8-17w.. Acidized at 3,312-60 ft.; 88 bbls. oil in 2½ hrs.; pipe trouble.

RUSH COUNTY

Central States L. & P. Co.'s No. 1 Bagnall, SE cor. Sec. 10-17-18w ..... Location.

RUSSELL COUNTY

C. L. Price et al's No. 1 Bender-B, NW SE Sec. 10-14-13w ..... Material.

SEDGWICK COUNTY

D. Lauck's No. 1 Gillespie, NE SE SW Sec. 6-28-1w....Fishing 405 ft.
Sovereign Oil Co.'s No. 1 Nichols, C NW SE Sec. 20-25-1w ....Drlg. 845 ft.
Trees Oil, Derby Oil et al's No. 1 McMinn, SW NE Sec. 36-26-1e ....Spudded.

STAFFORD COUNTY

Stanolind O. & G. Co.'s No. 1 Denker, 693 ft. from N line, 330 ft. from W line, SW Sec. 10-22-12w .....Set 13-in. csg. 260 ft.

SUMNER COUNTY

Morgan & Flynn's No. 1 Mercer, NW NE NW Sec. 36-32-1w ....Drlg. 1,560 ft.

TREGO COUNTY

Central Commercial's No. 2 King, C SE SW NE .....Drlg. out cave; T.D. 4,015 ft.

WOODSON COUNTY

Sheedy et al's No. 1 Street, NW SE NW Sec. 28-24-14...Drlg. 1,825 ft.
Schwartz et al's No. 1 Collins, SW NW NE Sec. 30-23-14..S.D. 200 ft.

Gulf Coast Fields and Wildcats

(Continued from Page 71)

Texas Co.'s No. 1 W. D. Morrison, 743 ft. from N and 441 ft. from E lines of lease, C of Lot 33, A.C.H.&B. Sub., Sec. 91 ....Drlg. shale and lime 4,887 ft.
Texas Co.'s No. 1 Helen J. Way, NE cor. of 50-acre tract in Lot 20, Thos. Spragging Sub. ....T.D. 5,140 ft.; comp. 470 bbls. dly. ¼-in. choke.

STRATTON RIDGE—BRAZORIA COUNTY

Amerada Pet. Corp.'s No. 5 Seaborn, Austin-Williams Sur., 600 ft. E of No. 3 and 229 ft. S at R/A .....Stuck D.S. 7,202 ft.; P.B. to 7,100 ft.; W.O.C.

WEST COLUMBIA—BRAZORIA COUNTY

Miramar Oil Corp.'s No. 3 Hogg, 100 ft. N of No. 2 and 100 ft. from W line of lease ....Drlg. 4,750 ft.

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Prod. Co.'s No. 3-B Gulf fee, 25 ft. out of SE cor. of lease ....T.D. 1,362 ft.; prep to cmt.
Humble O. & R. Co.'s No. 5-B Kirby, Henry Griffith League, 938 ft. W of E line, 537 ft. N of S line of tract ....T.D. 4,940 ft.; comp. 456 bbls. dly. ¼-in. choke; tubing pressure 445 lbs.; csg. pressure 675 lbs.
Humble O. & R. Co.'s No. 6-B Kirby, 593 ft. N of S line, 388 ft. E of W line of lease, or 125 ft. N and 288 ft. W of No. 5 ....Location.
Moody Corp.'s No. 5-A E. W. Barber, 100 ft. E of W line and 70 ft. N of S line of lease ....T.D. 1,334 ft.; W.O.C.
Moody Corp.'s No. 6-A Barber, 75 ft. W or E line and 400 ft. N of S line of lease ....Derrick.
Sinclair Prairie Oil Co.'s No. 17-A Wilburn, 150 ft. W of No. 13 ....Top salt 1,380 ft.; sandy shale 4,187 ft.; faint odor oil.
Sun Oil Co.'s No. 9 Chambers Co., 181 ft. W of No. 8 and 50 ft. from N line of lease ....T.D.; sand, shale and cap rock 1,672 ft.; W.O.C.
Sun Oil Co.'s No. 3 Higgins, 50 ft. E line and direct offset to McAlbert's No. 2 Higgins in Wm. Hodges Sur. ....Pulling screen to W.O.; T.D. 3,018 ft.
Sun Oil Co.'s No. 5 Higgins, 125 ft. W of No. 4 ....Set 13⅜-in. csg. at 1,392 ft.
Sun Oil Co.'s No. 16 Wilburn fee, 130 ft. W of No. 15 and 40 ft. from N line of 20-acre tract in William Hodges Sur. ....T.D. 4,270 ft.; stuck drill pipe; washing.
Texas Co.'s No. 8 Wilburn, 25 ft. W of No. 5 and 50 ft. N of S line in the Henry Griffith League ....Drlg. sticky shale 5,532 ft.
Texas Gulf Prod. Co.'s No. 3 Barber, 514 ft. W, 41 ft. S of NE cor. of lease, Henry Griffith League....Drlg. hard lime 4,726 ft.; top lime 4,717 ft.
Texas Gulf Prod. Co.'s No. 8 A. E. Barber, 400 ft. S of N line and 50 ft. E of W line of lease ....Drlg. shale 3,242 ft.
Texas Gulf Prod. Co.'s No. 4 Wilburn, Wm. Hodges Sur., 330 ft. N of S line, 50 ft. W of E line ....T.D. 4,881 ft.; cmtd. 3,782 ft.; drlg. shale 4,846 ft.; bottom sand 4,839 ft.
Yount Lee Oil Co.'s No. 24 Chambers County, 400 ft. W of No. 23 in line with No. 21 ....Drlg. cap rock 1,300 ft.; lost returns at 1,275 ft.
Yount Lee Oil Co.'s No. 25 Chambers County, 75 ft. S, 50 ft. W of NE cor. of lease ....Rigging up.
Yount Lee Oil Co.'s No. 8 Phillips, Wm. Hodges Sur. ....Drlg. salt 2,425 ft.

BIG CREEK—FORT BEND COUNTY

Gulf Prod. Co.'s No. 63 Davis, 2,270 ft. SW of No. 59 and in line with No. 21 and No. 59 in M. Young Sur. ....Drlg. sand 3,984 ft.

RABBS RIDGE—FORT BEND COUNTY

Humble O. & R. Co.'s No. 21-A F. J. Booth ....T.D. 5,250 ft.; comp. 60 bbls. hr.; ⅝-in. choke.
Humble O. & R. Co.'s No. 11 T. R. Booth, 281 ft. N, 15 ft. W of NE cor. of A. Myers tract No. 1, 180 acres in J. Rabb Sur. ....Drlg. hard sand 1,721 ft.
Humble O. & R. Co.'s No. 26-A Lockwood & Sharp, 755 ft. N and 14 ft. W of No. 26-B, in J. Rabb Sur. ....Derrick.
Humble O. & R. Co.'s No. 27-A Lockwood & Sharp, 1,149 ft. W of No. 26-A and 755 ft. W of No. 27-B in J. Rabb Sur. ....Drlg. hard lime 3,330 ft.
Humble-Gulf's No. 28-A Lockwood & Sharp, 379 ft. from S line and 2,872 ft. from E line of "A" lease in J. Rabb Sur. ....Location.
Naylor's No. 4 S. B. Gehr, 1,260 ft. from W line and 330 ft. from S line of lease in Samuel Kennedy Sur. .....T.D. 5,406 ft.; set screen; wouldn't flow; installing pumping unit.

LONG POINT—FORT BEND COUNTY

Oleson et al's No. 1 McFarland ....Cutting and pulling screen; T.D. 1,002 ft.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 39 Moore ....Drlg. sand 3,895 ft.

HIGH ISLAND—GALVESTON COUNTY

D.E.M. Oil Co.'s No. 2 Great Western ....T.D. 152 ft.; comp. 50 bbls.
Yount Lee Oil Co.'s No. 4 Broussary & Orme, M. Dunman Sur., 129 ft. SW of No. 3 ....Top salt 4,565 ft.; T.D. shale and pyrite 5,358 ft.; drlg. hard sand 3,975 ft.
Yount Lee Oil Co.'s No. 24 Cade, 300 ft. W of No. 22, at right angles to a line through 21, 22 and 23, in the N. Fitzsimmons Sur. ....T.D. shale 5,816 ft.; to W.O.
Yount Lee Oil Co.'s No. 41 Cade, Fitzsimmons Sur. ....Rigging up.
Yount Lee Oil Co.'s No. 40 Cade, 430 ft. NW of No. 2-B, 360 ft. from E line of lease and in line with No. 39 and No. 2-B, Fitzsimmons Sur. ....Drlg. hard sand 3,540 ft.
Yount Lee Oil Co.'s No. 2 Mathis, M. Dunman Sur., direct offset No. 1 Spencer ....Base salt 3,760 ft.; drlg. anhydrite 3,830 ft.; top anhydrite 3,801 ft.
Yount Lee Oil Co.'s No. 12 Smith, 330 ft. W of No. 11 and 100 ft. N of No. 2 ....T.D. 4,846 ft.; comp. 45 bbls. dly.
Yount Lee Oil Co.'s No. 22 Smith ....Rigging up.
Yount Lee Oil Co.'s No. 24 Smith ....Drlg. hard sand 5,457 ft.

ARRIOLA—HARDIN COUNTY

Republic-Houston's No. 2-X Arriola fee ....T.D. 4,573 ft.; P.B. to 2,300 ft.; drlg. sand 4,300 ft.

BATSON—HARDIN COUNTY

Danciger O. & R. Co.'s No. 2 Hooks, W. Donoho Sur., 330 ft. E of CWL, Blk. 24 ....T.D. 4,795 ft.; flowed salt water; P.B. 4,760 ft.; 300 lbs. pressure; making oil and water.

SARATOGA—HARDIN COUNTY

Rio Brava Oil Co.'s No. 109 Jordit ....T.D. 1,420 ft.; prep. to run tbng.
Seismo Oil Co.'s No. 1 Casewell, 940 ft. S of NW cor. and 600 ft. from E line, B.B.B.&C. Sur. ....T.D. 3,212 ft.; shut down.
Sinclair Oil Co.'s No. 1 Teel Estate, 3,685 ft. W of E line of league, 4,285 ft. S of N line of league, or 1,032 ft. S of N line and 717 ft. W of E line of 134-A. tract ....Drlg. 1,030 ft.
Skinner Oil Co.'s No. 3 Bessler ....Drlg. rock 2,160 ft.; lost returns.

SOUR LAKE—HARDIN COUNTY

Alpha Pet. Co.'s No. 1 J. M. Weiss, 122 ft. S of Steinberger's No. 1 Weiss in Blk. 25 ....Spud.
Parr et al's No. 1 Benard, in W.C.R.R. Sur. No. 69 (west edge) ....T.D. 7,061 ft.; prep. to pull tubing and P.B. to whipstock.
Steinberger Pet. Co.'s No. 1 Weiss, 150 ft. W of Parr No. 1 and 50 ft. out of SE cor. of Blk. 28, E. B. Williams Sur. ....Location.
Texas Co.'s No. 308 fee, 375 ft. S, 110 ft. E of No. 299, in Stephen Jackson League ....Rigging up.
Yount Lee Oil Co.'s No. 6 Lynn, 250 ft. from W line and 200 ft. from N line of 43-acre tract in Sour Lake Oil Co. Sub. ....Drlg. salt 3,780 ft.; top sand 3,680 ft.

GOOSE CREEK—HARRIS COUNTY

Edwards Drlg. Co.'s No. 1 Matthews, 40 ft. from S line and 37 ft. from W line of 1-acre tract in Wm. Scott Sur. No. 67 ....T.D. 4,055 ft.; putting on pipe.
Gulf Prod. Co.'s No. 13 St. Land Prod., 39 ft. from E line or 39.4 ft. W of Sun Oil Co.'s No. 1 McFarland, Wm. Scott Sur. No. 67 ....T.D. 4,680 ft.; P.B. 4,030 ft. to kill gas; perforated 7-in. csg. 4,000-20 ft.; flowed oil, gas and wtr.
Gulf Prod. Co.'s No. 18-A Tabb-fee, 217 ft. S of No. 17-A and C of tract in Wm. Scott Sur. ....Sand 3,189 ft.; P.B. 2,785 ft.
Hoffner & Moore's No. 1 A. A. Wright, 50 ft. N and 50 ft. E of SW cor. of Blk. 7, Wm. Scott Sur., Abst. No. 65 ....T.D. 5,221 ft., shale; standing.
Humble O. & R. Co.'s No. 30 Simms-Smith ....Bldg. derrick.
Humble O. & R. Co.'s No. 28 Sweet, 13 ft. W of SE cor. of Scott 2½-acre tract and 53 ft. from N line of lease, Wm. Scott Sur. No. 67 ....Location.
Miramar Oil Co.'s No. 2 Hughes, 284 ft. from S line and 50 ft. from E line of 7½-acre tract in Wm. Scott Sur. ....T.D. 4,551 ft.; comp. 500 bbls.; top sand 4,548 ft.
Jay Simmons' No. 1 Dannebaum, 45 ft. from S and 50 ft. from E lines of lease in W. Scott Labor Sur. ....Derrick.
Jay Simmon's No. 1 Kerwin Mitchell, SE cor. of 6-acre tract ....D.S. test 4,698-4,760 ft.; 12 min.; 1,050 ft. oil, S.W. and gas; T.D. 5,034 ft.; S.D.
Thomas Drlg. Co.'s No. 1 Jones ....Drlg. gumbo 576 ft.
Wilhite's No. 1 Gillette ....Drlg. sand 2,815 ft.
Wilhite's No. 1 Isenhour ....Rigging up.
Wilhite's No. 2 Gillette, 100 ft. SW from N line of SW Hoskins tract in Lot 1 and 50 ft. NW from W bank of stream, Wm. Scott Sur. No. 66 ....Derrick.

HUMBLE—HARRIS COUNTY

Rio Bravo Oil Corp.'s No. 8 fee, 250 ft. E, 100 ft. S of No. 2 fee ....Drlg. shale 3,798 ft.
Texas Co.'s No. 47 Stevenson, J. B. Stevenson Sur., 859 ft. E, 457 ft. S of NW cor., Lot 1-A ....T.D. 5,338 ft.; sidetracking, salt 3,643 ft.

PIERCE JUNCTION—HARRIS COUNTY

Rio Bravo Oil Corp.'s No. 9-A Settegast, 1,575 ft. N line, 350 ft. E line NE cor. "A" lease, J. A. Kopman Sur....T.D. 4,510 ft.; rigging up to work over; standing.
Rio Bravo Oil Corp.'s No. 12-A Settegast, 1,410 ft. N line, 650 ft. E line, J. A. Kopman Sur. ....T.D. 4,900 ft.; milling 4,833 ft.
Rio Bravo Oil Co.'s No. 24-A Settegast, J. Kopman Sur. No. 44, 1,000 ft. S, 200 ft. W of NE cor. of "A" lease..T.D. 4,731 ft.; set whipstock, milling 4,650 ft.

TOMBALL—HARRIS COUNTY

Amerada-Rycade's No. 1 Ashley, 500 ft. E and 466 ft. S of Ashley tract in Joseph House Sur. ....T.D. 5,590 ft.; rmg to set 7-in. csg
Humble & Magnolia's No. 2 Bloecher, 984 ft. from N line and 663 ft. from W line of lease, J. Hooper Sur. No. A-375 ....T.D. 5,579 ft.; W.O.C.
Humble-Magnolia's No. 2 C. F. W. Hendricks, 966 ft. S of N line and 466 ft. W of E line of 96-A. tract in Wm. Heard Sur. ....Derrick.
Humble O. & R. Co.'s No. 1-B J. F. W. Kobs, 466 ft. from S line and 405 ft. E. of W line of tract, J. Edwards Sur. ....Derrick.
Humble O. & R. Co.'s No. 3-B Kobs, 2,182 ft. S of N line, 369 ft. W of E line of lease in J. H. Edwards Sur. ....Drlg. shale 3,753 ft.
Humble-Magnolia's No. 3 Theo. Krug, 6,360 ft. N of most southerly S line and 235 ft. W of W line of Scherer 112-acre tract in J. H. Edward Sur. No. 20..T.D. 5,555 ft.; W.O.C.
Humble-Magnolia's No. 1 Krug, 600 ft. N and 187 ft. E from SW cor. of J. F. W. Kobs 30.6-acre tract in J. H. Edwards Sur. ....Location.
Humble-Magnolia's No. 2 Krug, 466 ft. from E line of lease and 800 ft. S of S line of Sherer 112-acre tract in J. H. Edwards Sur. ....Location.
Humble and Magnolia Pet. Co.'s No. 2 B. J. Petrick, 700 ft. S of N line, 1,171 ft. W of E line of lease in J. M. Hooper Sur. No. A-372 ....Derrick.
Humble & Magnolia's No. 2 Rudel-Oster, 150 ft. S of Amerada & Stanolind's No. 2 Fletcher, half way between E and W lines of 50-acre tract in J. House Sur. No. 24 ....Location.
Humble-Magnolia's No. 1-B Schultze, 466 ft. from W line and 3,276 ft. from S line of tract in J. H. Edwards Sur. No. 20 ....T.D. 5,606 ft.; W.O.C.
Humble O. & R. Co.'s No. 1 Werner ....Drlg. shale 828 ft.
Shell Pet. Co.'s No. 1 W. W. Baker, 440 ft. S of C of N line of lease, J. House Sur. No. 24 ....Location abc.
Shell Pet. Co.'s No. 2 W. W. Baker, 630 ft. S of No. 1 and 466 ft. from W line of lease, J. House Sur. No. 24 ....Location abc.
Skelly Oil Co.'s No. 1 Schultz, J. H. Edwards Sur., 456 ft. from S line, 464 ft. from E and W lines ....Rigging up.
Texas Co.'s No. 2 Scherer (W. V. Bowles), 2,150 ft. S and 466 ft. W of NE cor. of lease in J. House Sur...Elev. 212 ft.; T.D. 5,655 ft.; setting screen.

ESPERSON—LIBERTY COUNTY

Cranfill & Reynolds' No. 4 Moores Bluff, 400 ft. S of No. 3 and 534 ft. from E line of tract in Duncan Sur..T.D. 2,306 ft.; sidetracking.
General Crude Oil Co.'s No. 8 Davis, 660 ft. from S and 1,000 ft. from E line of lease in D. Kokernut Sur....Drlg. shale 2,021 ft.

HULL—LIBERTY COUNTY

Eclipse's No. 4 Barrow ....Preparing to work over.
Gulf Prod. Co.'s No. 101 Phoenix, E. G. Devore Sur. ....Drlg. sandy shale 4,004 ft.
Gulf Prod. Co.'s No. 102 Phoenix, E. G. Devore Sur. ....Drlg. rock 428 ft.
Mirimar Oil Co.'s No. 10-A Phoenix, 250 ft. E of No. 3 and 100 ft. from N line of lease in J. Devore Sur. ...T.D. 4,474 ft.; P.B. 4,374 ft.
Mirimar Oil Corp.'s No. 4-B Phoenix, 200 ft. E of No. 1 and 50 ft. from N line of lease in J. Devore Sur. ...Drlg. 6,400 ft.
Republic Prod. Co.'s No. 152 Dolbear, midway between Nos. 59 and 135, in the J. Devore Sur. ....T.D. 2,031 ft.; setting screen.
Republic Prod. Co.'s No. 153 Dolbear, 400 ft. N and 45 deg. E from No. 151, in the J. Devore Sur. ....Derrick.
Sun Oil Co.'s No. 6-A Carr, J. Devore Sur. ....T.D. 4,826 ft.; comp. 52 bbls. hr.; csg. pressure 1,000 lbs.; tubing pressure 500 lbs.

Sun Oil Co.'s No. 7-A Carr, 200 ft. W of E line and 277f t. S of N line of lease.....Derrick.
Texas Co.'s No. 7 Barrow fee, 458 ft. S and 350 ft. W of NE cor. of tract in J. Devore league .....Rigging up.

LIBERTY COUNTY

Mrs. I. M. Lemon Oil Co.'s No. 1 Richardson, 120 ft. E of Gulf & Humble's No. 1 Carter, in M. G. White Sur. .....T.D. 3,882 ft.; rerun tubing. standing.

MARKHAM—MATAGORDA COUNTY

Hamil and Powers' No. 3 Myers, 150 ft. from N, 225 ft. NW of No. 1, in Wm. Hadden Sur. .....Location.

CONROE—MONTGOMERY COUNTY

Alpha Pet. Co.'s No. 3-B Keystone Mills .....Drlg. shale 4,060 ft.
Gulf Coast Drlg. & Prod. Co.'s No. 23 Keystone Mills ..T.D. 5,101 ft.; comp. 482 bbls. dly.
Gulf Coast Drlg. & Prod. Co.'s No. 24 Keystone Mills ..T.D. 5,089 ft.; comp. 469 bbls. dly. on ¼-in. choke.
Gulf Coast Drlg. & Prod. Co.'s No. 25 Keystone Mills..Drlg. 4,960 ft.
Gulf Coast Drlg. & Prod. Co.'s No. 26 Keystone Mills..Drlg. 2,020 ft.
Humble O. & R. Co.'s No. 24 Keystone Mills .....T.D. 5,127 ft.; W.O.C.
Humble O. & R. Co.'s No. 29 Keystone Mills .....T.D. 5,124 ft.; W.O.C.
Humble O. & R. Co.'s No. 6-D Keystone Mills .....T.D. 5,129 ft.; .WO.C.
Humble O. & R. Co.'s No. 52 Moore .....Drlg. shale 4,340 ft.
Humble O. & R. Co.'s No. 65-A South Texas Dev. Co. ...Drlg. shale 3,000 ft.
Humble O. & R. Co.'s No. 9-B South Texas Dev. Co. ...Drlg. shale 3,872 ft.
Humble O. & R. Co.'s No. 5 B. E. Jones .....Drlg. shale 1,803 ft.
Humble O. & R. Co.'s No. 28 Keystone Mills .....Drlg. shale 982 ft.
Humble O. & R. Co.'s No. 7-D Keystone Mills .....Spud 40 ft.
Houston-Tide Water Oil Co.'s No. 8 Cartwright, 1,263 ft. from S line and 2,034 ft. from W line of lease in John Davis Sur. .....T.D. 5,174 ft.; W.O.C.
Houston-Tidewater Oil Co.'s No. 10 Hammond, Stewart Sur. .....Derrick.
Pine Tree Oil Co.'s No. 1 South Texas .....Shale 5,182 ft.; W.O.C.
Sun Oil Co.'s No. 13 Keystone Mills, 704 ft. E from No. 17 well, thence S 282 ft. in A. Steele Sur. .....Drlg. 4,564 ft.

PORT NECHES—ORANGE COUNTY

Texas Co.'s No. 2 Orange Natl. Bank, Jacob Beaumont Sur., 1,538 ft. W and 300 ft. S of NE cor. of lease ..Circulating; T.D. 6,762 ft.
Texas Co.'s No. 2-B Polk, 695 ft. N, 150 ft. S of NE cor. of N. Jacob Beaumont Sur. .....Drlg. shale 6,430 ft.

LIVINGSTON—POLK COUNTY

H. B. Owenby's No. 1 Duff, 78 ft. N of S line, 656 ft. W of E line of lease in A.Viesca Sur. .....Drlg. 2,000 ft. shale and lime.
Reading & Bates' No. 2 Davis Holmes, 850 ft. from N line and 320 ft. from E line of lease in A. Viesca Sur. .....T.D. 4,360 ft.; D.S. test 4,330-60 10 mins., ¼-in. choke; flowed oil 8 min.; comp. 43 bbls. hr.; ½-in. choke.
Werby Pet. Co.'s No. 1 Whittiforth, between Livingston and Sunshine Area .....T.D. 4,076 ft.; ⅝-in. choke top. ½-in. bottom; 18 mins. 1 ft. salt water and mud, 35 fourbles salt water.

GRETA—REFUGIO COUNTY

Atlantic & Stanolind's No. 3-G J. M. O'Brien, Winfield Sur. .....Drlg. shale 1,310 ft.
Atlantic & Stanolind's No. 6-A J. J. O'Brien, Ximines Sur. .....T.D. 1,150 ft.; W.O.C.
Fiboots Oil Corp.'s No. 1 M. C. Bauer, 330 ft. N line, 1,724 ft from W line, J. M. Ximines Sur. .....T.D. 3,487 ft.; flowing gas and S.W.; T.P. 325 lbs., C.P. 650 lbs.
Floboots Oil Corp.'s No. 2-C J. M. O'Brien, 466 ft. from S and E lines of Block 15, Smith Subd., Winfield Sur. .....Spud.
Fiboots Oil Co.'s No. 4-C J. M. O'Brien, 503 ft. from E line and 466 ft. from S line of Blk. 8, Peoples Sur...W.O.C.; T. D. 4,384 ft.
Hewitt & Dougherty's No. 4 Lambert, 466 ft. from N line and 507 ft. from W line of Blk. 5, Hardwick Sur. .....T.D. 4,383 ft.; running csg.
Houston Oil Co.'s No. 15 Rooke, 160 ft. S along E line along NE cor., 150 ft. W at right angles.....Rigging up.
Humble O. & R. Co.'s No. 4 Fannie Heard, 1,216 ft. from E line and 466 ft. from N line of lease in Ximines Sur. .....T.D. 4,393 ft.; comp. 8 bbls. in 6 hrs.; 3/32-in. choke.
Humble O. & R. Co.'s No. 5 J. F. B. Heard in Peopes Sur. .....Drlg hard sand 4,055 ft.
Humble O. & R. Co.'s No. 6 J. F. B. Heard .....Derrick.
Stanolind Oil & Gas Co.'s No. 2-A J. M. O'Brien, Peoples Sur., begin at NE cor. of "A" lease, thence W along N line 1,569 ft., thence S at right angles 466 ft., S offset to No. 4-B .....S.D. 4,384 ft.
Stanolind Oil & Gas Co.'s No. 4 O'Connor, 466 ft. from W and S lines of 100-acre lease in Crunk Sur. .....T.D. 4,385 ft.; W.O.C.
United Prod. Co.'s No. 15 Fox, 330 ft. W of No. 2-A in Wm. Hews and L. Brown Sur. .....T.D. 5,940 ft.; fishing.
United Prod. Co.'s No. 14 W. J. Fox et al, 466 ft. from N line and 1,060 ft. W of No. 11 on 848-acre tract in Wm. Hews and L. Brown Sur. .....Drlg. sand 5,188 ft.
United Prod. Co.'s No. 3 Lambert .....T.D. 3,520 ft.; prep. to drill plug.
United Prod. Co.'s No. 8 Lambert .....Spud.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 2 Schermer, N. Clay Sur., 330 ft. NW, 330 ft. SW line of lease .....Coring 4,236 ft.
Sun Oil Co.'s No. 5 Schlettman .....Set surface csg.

BOLING FIELD—WHARTON COUNTY

Imperator Oil Co.'s No. 1 S. T. Taylor, 593 ft. SW and 183 ft. SE from N cor. of old Vacuum 50-acre lease and offset Texas' No. 12 Taylor in S. F. Austin Sur...T.D. 3,062 ft.; S.D. cavity.

SOUTH LOUISIANA FIELDS

BLACK BAYOU—CAMERON PARISH

Shell Pet. Corp.'s No. 3 State .....Drlg. sandy shale 3,630 ft.

BOSCO—ACADIA AND ST. LANDRY PARISHES

Humble O. & R. Co.'s No. 1 Joseph Berb, located on 100-acre tract lease in Section 21-8s-3e, about a mile and a half NW of the producer .....Location.
Shell Pet. Corp.'s No. 1 E. M. Eliabourout, in Section 22-8s-3e, 1⅛ mile due N of discovery well.....Location.
Standard Oil Co. of Kans.' No. 1 Joseph Mouton .....Derrick.
Superior Oil Co.'s No. 1 J. Sidney Arceneaux et al, 1,665 ft. N and 439 ft. W of SE cor. of Sec. 28-8s-3e .....Rigging up.
Superior Oil Co.'s No. 1 U. T. Iseringhauser, 1,381 ft. E and 502 ft. S of NW cor. of Sec. 35-8s-3e .....Drlg. 2,391 ft.
Superior Oil Co.'s No. 1 Leo E. Kahan et al, 2,381 ft. N and 466 ft. W of SE cor. of Sec. 33-8s-3e .....Drlg. 4,671 ft.
Superior Oil Co.'s No. 1 Elise Mire, 590 ft. S and 597 ft. W of NE cor. of Sec. 33-8s-3e .....Drlg. 1,214 ft.
Superior Oil Co.'s No. 1 Looanstie Richard, 2,878 ft. S and 466 ft. W of NE cor. of Sec. 34-8s-3e .....T.D. 1,345 ft.; W.O.C.
Superior Oil Co.'s No. 1 Marcellus Savoie, 2,201 ft. S and 761 ft. W of NE cor. of Sec. 27-8s-3e .....Drlg. 1,264 ft.

CALCASIEU LAKE—CAMERON PARISH

Texas Co.'s No. 10-A State, 16,855 ft. W and 3,270 ft. N of NE cor. Sec. 1-14s-9w in Twp. 13s-9w .....Drlg. gumbo 1,345 ft.

CAMERON MEADOWS—CAMERON PARISH

Burton-Sutton Oil Co.'s No. 1 School Land, 2,360 ft. W and 20 ft. N of SE cor. of Sec. 16-14s-13w .....T.D. 4,410 ft.; to work over; S.D.
Burton-Sutton Oil Co.'s No. 4 School Land, 2,891 ft. W and 150 N of SE cor. of Sec. 16-4s-13w .....Location.
Humble O. & R. Co.'s No. 3 Cameron Meadows, 2,395 ft. W, 150 ft. S of NW cor. Sec. 21-14s-13w .....Drlg. shale 2,208 ft.
Humble O. & R. Co.'s No. 1-B Cameron Meadows, 250 ft. W and 2,640 ft. S of NE cor. of Sec. 24-14s-14w...Drlg. shale 2,768 ft.
Texas Co.'s No. 1 Miami Corp. .....T.D. 175 ft.; W.O.C.

CHOCTAW FIELD—IBERVILLE PARISH

Standard Oil Co.' of Louisiana's No. 6 Myrtle Grove Wilbert, Sec. 52-9s-11e .....Spud and S.D.

EDGERLY—CALCASIEU PARISH

Rex. Pet. Co.'s No. 13 Hunter, 466 ft. N, 90 ft. E of SW cor. of SE ¼ .....T.D. 4,050 ft.; S.D.
Union Sulphur Co.'s No. 1 La Prairie Narrone, 1,061 ft. N, 250 ft. W of SW cor. SW Sec. 21-9s-11w .....Salt 6,520 ft., T.D.; using well for seismograph work.

FOUR ISLAND—TERREBONNE PARISH

Texas Co.'s No. 3 State, Four Island .....Rigging up.
Texas Co.'s No. 6 State, Four Island .....Dredging canal.
Texas Co.'s No. 7 State, Four Island .....Dredging canal.

GARDEN ISLAND—PLAQUEMINES PARISH

Texas Co.'s No. 11 Garden Island, 4,191 ft. S and 1,504 ft. W of NE cor. Sec. 107-23s-32e .....Drlg. lime 1,675 ft.
Standard Oil Co. of Louisiana's No. 6 Myrtle Grove Wilbert, Sec. 52-9s-11e .....Moving in rig.

GUEYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 6 Alliance Trust, 667 ft. E, 1,787 ft. S line of lease, Sec. 34-11s-1w .....Coring sand and shale 7,090 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 2 Hanszen, 400 ft. W and 200 ft. S of No. 1 in Sec. 14-12s-10w .....Rock 6,165 ft.; (no report).
Gulf Prod. Co.'s No. 14-A Irwin, 300 ft. SE of No. 13-A ..Drlg. shale and lime 5,275 ft.
Sutton Oil Co.'s No. 1 Portier, 2,930 ft. W and 1,220 ft. N of SE cor. of Sec. 22-12s-10w .....Location.
Texas Co.'s No. 10-B State, 1,000 ft. E, 200 ft. N of NE cor. Sec. 13-12s-10w .....T.D. 7,287 ft.; pulled tubing; swabbing casing.
Texas Co.'s No. 12-B State, 500 ft. SE of No. 10-B or 1,360 ft. E and 149 ft. S of NE cor. of Sec. 13-12s-10w .....Derrick.
Union Sulphur Co.'s No. 1 Barbee est., 1,720 ft. N line, 320 ft. E of SW cor. Sec. 12-12s-10w .....T.D. 7,986 ft.; sidetracking 6,869 ft.
Union Sulphur Co.'s No. 9 Humble, 300 ft. E and slightly N of No. 1 well, or 830 ft. N and 270 tf. E of the SW cor. of Sec. 12-12s-10w .....Derrick.
Yount Lee Oil Co.'s No. 11 Gulf Land, Sec. 14-12s-10w ..Drlg. wtr. sand 6,390 ft.
Yount Lee Oil Co.'s No. 14 Gulf Land .....Drlg. wtr. sand 3,897 ft.

IOWA—CALCASIEU AND JEFF DAVIS PARISHES

Barnsdall Oil Co.'s No. 1 Caffal, 330 ft. N and E of SW cor. of lease .....T.D. 6,987 ft.; comp. 980 bbls. through .24/64-in. choke.
Barnsdall Oil Co.'s No. 5 Fontenot, 990 ft. N and 330 ft. W of SE cor. of SW of Sec. 7-9s-6w .....T.D. 6,988 ft.; comp. 140 bbls. through ¼-in. choke.
Barnsdall Oil Co.'s No. 6 Fontenot, 330 ft. from N and W lines of lease in Sec. 7-9s-6w .....Location.
Magnolia Pet. Co.'s No. 2 Gillison, 990 ft. W and 200 ft. N of SE cor. of lease in Sec. 12-9s-7w .....Derrick.
Magnolia Pet. Co.'s No. 6 Wait .....T.D. 6,917 ft.; comp. 813 bbls. through ¼-in. choke.
Magnolia Pet. Co.'s No. 7 Wait .....Shut down.
Magnolia Pet. Co.'s No. 8 Wait, 998 ft. W and 330 ft. N of SE cor. of 160-acre lease .....Drlg. shale 6,420 ft.
Shell Pet. Corp.'s No. 2 Ardoin .....Coring shale 7,075 ft.
Shell Pet. Corp.'s No. 7 Heyd, 660 ft. out of NW cor. of lease, Sec. 13-9s-7w .....Drlg. cmt. 6,914 ft.
Shell Pet. Corp.'s No. 8 Heyd .....Drlg. sand showing oil 6,298 ft.; top sand 6,281 ft.
Shell Pet. Co.'s No. 9 Heyd, 998 ft. W and 330 ft. S of NE cor. of 320-acre lease .....Drlg. shale 4,270 ft.
Shell Pet. Co.'s No. 4 E. D. Stafford, 990 ft. S and 330 ft. W of NE cor. of lease .....Drlg. sandy shale 4,931 ft.
Shell Pet. Corp.'s No. 1 Tuter .....T.D. 6,722 ft.; comp. 1,641 bbls. daily through 23/64-in. choke.

JENNINGS—ACADIA PARISH

Yount Lee Oil Co.'s No. 13 Houssiere-Latrielle, Sec. 47-9s-2w, 300 ft. E of No. 12 .....Fishing 7,354 ft.

LAKE BARRE—TERREBONNE PARISH

Texas Co.'s No. 10 L.L.&E., 4,543 ft. S, 503 ft. W of NW cor. Sec. 30-21s-20 .....Drlg. shale 3,690 ft.
Texas Co.'s No. 24 Lake Barre .....Drlg. sand 1,291 ft.
Texas Co.'s No. 28-A Lake Barre, 200 ft. SE from No. 17 in Sec. 29-21s-19e .....Drlg. anhydrite 1,169 ft.
Texas Co.'s No. 28-D State Lake Barre, 300 ft. SW from No. 27 in Sec. 40-21s-19w .....Drlg. salt 2,331 ft.; (no report).

LAKE PELTO—TERREBONNE PARISH

Texas Co.'s No. 11 Lake Pelto, 1,600 ft. SW of No. 5....Driving piling.
Whitstone O. & G. Co.'s No. 1 Buckley, 300 ft. S and E, of NW cor. SW SW Sec. 35-19s-16e .....Drlg. shale 1,500 ft.

LEESVILLE—LAFOURCHE PARISH

Robert Bowles' No. 2 Crosby, 2,405 ft. N and 1,952 ft. E of SW cor. of Sec. 26-21s-22e .....T.D. 2,930 ft.; fishing.
Ben Coll and Texas Co.'s No. 1 LaFourche .....Drlg. shale 2,100 ft.
Emerald Pet. Co.'s No. 3 State of Louisiana .....Set 7⅝-in. csg. 3,672 ft.
Emerald Pet. Co.'s No. 4 State of Louisiana .....Derrick.
Emerald Pet. Corp., No. 5 State of La., 1,878 ft. N of No. 1 well in Sec. 26-21s-22e .....Location.
Emerald Pet. Corp.'s No. 6 State of Louisiana .....Rigging up.
Gulf Prod. Co.'s No. 2 Allen Land Co. .....Sand 3,696 ft.; comp. 720 bbls.
Gulf Prod. Co.'s No. 4 Bernard, 1,086 ft. N and 292 ft. E of SW cor. of L. Bernard 5.8-acre tract in Lot 4, Sec. 26-21s-22e .....Drlg. shale 3,729 ft.
Lincoln Oil Co.'s No. 1 Visier .....T.D. 3,714 ft.; comp. 2,400 bbls. daily through ⅛-in. choke.
Lincoln Oil Co.'s No. 6 State, 3,750 ft. N and 1,200 ft. E of SW cor. of Sec. 26 .....Rigging up.
Southern Sulphur Co.'s No. 1 Largrenze .....Drlg. sand 3,398 ft.
Texas Co.'s No. 14 L.L.&E. .....Drlg. 3,124 ft.
Texas Co.'s No. 16 L.L.&E. .....Rigging up.
Texas Co.'s No. 17 L.L.&E., 1,821 ft. S and 122 ft. E of NW cor. of Sec. 27-21s-22e .....Dredging canal.
Texas Co.'s No. 18 L.L.&E., 2,638 ft. S and 1,056 ft. E of NW cor. of Sec. 26-21s-22e .....T.D. 3,718 ft.; W.O.C.

LOCKPORT—CALCASIEU PARISH

Magnolia Pet. Co.'s No. 8 Farquhar, 850 ft. S, 190 ft. NE cor. NE¼ of SE¼, Sec. 8 .....Preparing to work over.
Magnolia's No. 25 Miller, 400 ft. N, 544 ft. W of Sec. 9-10-9, W of SE cor. NW .....Preparing to work over.
Magnolia Pet. Co.'s No. 26 Miller, 480 ft. S, 780 ft. E NW cor. SW¼ NW¼ Sec 9 .....Preparing to work over.
Strake Oil Co.'s No. 1 Miller, 500 ft. due N of Yount Lee's No. 1 Miller, Sec. 8-10s-9w .....Drlg. 3,710 ft.
Union Sulphur Co.'s No. 1 Farquaher, 200 ft. S and W lines. NE cor. SW SE Sec. 36-12s-10w, 2-ac. tract ..Tested salt water; S.D.; T.D. 7,461 ft.
Union Sulphur Co.'s No. 6 Moss, between Nos. 2 and No. 5 .....Drlg. 3,698 ft.

PORT BARRE—ST. LANDRY PARISH

Texas Co.'s No. 17 Botney Bay, 1,300 ft. S 8 deg. W, 600 ft. N 82 deg. most southern NE 560 deg. tract, Sec. 4-8s-5e .....T.D. 3,282 ft.; W.O.C.

STARKS—CALCASIEU PARISH

Union Sulphur Co.'s No. 5 Industrial Lbr. Co., 300 ft. S of No. 4, Sec. 30-9s-13w .....S.D. 4,640 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 776 fee .....Drlg. gumbo 2,828 ft.
Union Sulphur Co.'s No. 788 fee, 602 ft. S, 1,209 ft. W of C Sec. 29-9s-10w .....T.D. 6,103 ft.; drlg. new hole 3,210 ft.
Union Sulphur Co.'s No. 790 fee, 929 ft. S and 802 ft. W of center of Sec. 29-9s-10w .....Drlg. shale 6,175 ft.
Union Sulphur Co.'s No. 791 fee, 529 ft. N, 907 ft. E of SW cor. Sec. 33-10s-12w .....T.D. 5,607 ft.; set whipstock 2,608 ft.; shale and lime 2,941 ft.; stuck drill stem; S.D. orders.
Union Sulphur Co.'s No. 794 fee .....Drlg. 3,552 ft.
Union Sulphur Co.'s No. 795 fee .....Location.
Union Sulphur Co.'s No. 796 fee .....Drlg. 2,613 ft.
Union Sulphur Co.'s No. 797 Fee, 1,652 ft. W, 413 ft. N of Center of Sec. 29-9s-10w .....Location.

Union Sulphur Co.'s No. 798 Fee, 673 ft. N, 575 ft. W of center of Sec. 29-9s-10w ..... Location.
Union Sulphur Co.'s No. 1 Bernard Ulrich, 75 ft. out of SW cor. Sec. 19-9s-10w ..... T.D. 5,738 ft.; fishing stuck drill stem.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 12 Yount Lee fee, 800 ft. S of No. 11, in line with Nos. 9 and 10, Sec. 12-13-3w ..... T.D. 7,439 ft.; prep. to start up.

WHITE CASTLE—IBERVILLE PARISH

Shell Pet. Corp.'s No. 8 Wilbert, 717 ft. N 60 deg. 30 min. E from SE of Lot 2 of Fractional Sec. 9, in Sec. 1-11s-12e ..... Sand 4,573 ft.; S.D.

VINTON—CALCASIEU PARISH

Marrs-McLean's No. 16 Gray ..... Standing 2,377 ft.; T.A.
Tri-Oil Co.'s No. 1 Matilda Gray, 33 ft. W, 35 ft. N. of SE cor. NE SW NE Sec. 33-9s-12w ..... T.D. 3,535 ft.; bldg. pump. unit.
Wilson Broach Co.'s No. 11 Wilson strip (workover) ..... Drlg. sand 4,110 ft. (no report).
Wilson Broach Co.'s No. 15 Wilson strip ..... T.D. 3,256 ft.; W.O.C.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

R. R. Mitchell's No. 1 H. Schleider, J. F. Fitzgibbons Sur., 300 ft. out NE cor. 96-ac. tract ..... T.D. 105 ft.; S.D.
Sun Oil Co.'s No. 1 Zetik, 662 ft. from N line and 1,509 ft. from W line of 104-acre tract in S. M. Williams Sur. ..... T.D. 2,823 ft.; reaming 2,720 ft.

BRAZORIA COUNTY

C. & R. Dev. Co.'s No. 1 National Life Co., 340 ft. from W line and 340 ft. from N line of 100-acre tract out of W end Nos. 3 and 4 in Henry Austin League No. 4, Abst. No. 12 ..... Rigging up.
Danciger O. & R. Co.'s No. 3-A Hunt, 2,100 ft. from E, 2,000 ft. from S lines of Hunt's 1,000-ac. tract in W. C. Carson Sur. ..... T.D. 6,797 ft.; milling on junk.
Danciger Oil & Ref. Co.'s No. 1-B Hunt, 1,400 ft. from NW line and 1,750 ft. from NE line of 1,600-acre tract in W. C. Carson Sur. ..... Sand 6,875 ft.; T.D.; will sidetrack.
Danciger Oil & Ref. Co.'s No. 1 Stark-Brown, 330 ft. out of most easterly NE cor. of lease in Perry & Austin Sur. ..... Drlg. shale 3,965 ft. (no report).

BRAZOS COUNTY

H. Elliott et al's No. 1 W. F. Odom, near center of 379-ac. tract in SW cor. of Isaac Curil Sur. ..... Cmtd. surface csg. 30 ft.
Holt et al's No. 1 Griffith ..... Moving in rig.
F. H. Scott's No. 1 Klintworth, L. Curd Sur., 300 ft. from N line, 400 ft. from E line ..... Drlg. 2,213 ft.
D. W. Young, Jr.'s (H. L. Bleam) No. 1 Harrison, 300 ft. from S and W lines of lease in J. D. Allcorne Sur. ..... Spudding.

BURLESON COUNTY

Southern Seaboard Co.'s No. 1 J. H. Coulter, 9,400 ft. from SW line and 2,200 ft. from NW line of 1,176-acre tract in SE cor. of County in A. Kennon Sur. .. Moving in.

CALHOUN COUNTY

Continental Oil Co.'s No. 1 American Nat. Realty Co., C of NE of Sec. 6, Blk. C ..... Drlg. 900 ft.
Herman Heep Oil Co.'s No. 1 Welder, 7,500 ft. from W line of river ..... Drlg. hard shale 6,455 ft.
Herman Heep Oil Co.'s No. 1-B F. Welder ..... Drlg. gumbo 3,106 ft.

CHAMBERS COUNTY

John H. Carreker's No. 1 B. Weaver, 404 ft. out of SE cor. of lease in A. Weaver Sur. ..... Drlg. 2,162 ft.
Miramar Oil Co.'s No. 1 Geo. Stengler, 3,200 ft. W of E line and center of N and S lines of lease in V. Barrow Sur. ..... T.D. 6,025 ft.; to D.D.

COLORADO COUNTY

Coyle-Concord Oil Co.'s No. 1 Nelson, 3,200 ft. SE of NW cor. of section, 2,200 ft. SW at right angles in L&G.N. Sur. ..... T.D. 4,052 ft.; R.U. and S.D.
Union Central Oil Co.'s No. 1 Mann, 620 ft. from W line and 330 ft. from N line of 20-acre tract in J. L. Dugat Sur. ..... Location.

FAYETTE COUNTY

Colorado Oil Co.'s No. 1 Anders ..... T.D. 2,562 ft.; gumbo and shale, rotating and circulating.

FORT BEND COUNTY

Edwards Drlg. Co.'s No. 1 H. Hausler, 780 ft. S of NE cor. of 103-acre tract, 510 ft. W of E line, Wickson Sur. ..... T.D. 3,675 ft.; heaving shale; P.B. 3,230 ft.; swbng.
Joe Moffat's No. 1 Blakly, 100 ft. from N and W lines of Lot 4, Block C ..... Drlg. gumbo 415 ft.
J. E. Seiber's No. 1 J. B. Farmer, 150 ft. out of most southerly cor. of 50-ac. tract in Jas. Scott Sur. ... Rigging up.

GALVESTON COUNTY

George K. Spoor's No. 1 Maco Stewart, 1,626 ft. N of SE cor. of Alex Farmer Sur. and 1,175 ft. E in W. K. Wilson Sur. (4 miles S of Dickinson) ..... Drlg. sticky blue shale 5,250 ft.
Humble O. & R. Co.'s No. 1 Maco Stewart, C of E and W lines of 400-acre tract in John Sellars Sur., S of Dickinson Bayou, 3 miles N of Spoor well ..... Drlg. 300 ft.

GRIMES COUNTY

Clark & Dodd's No. 1 Murry, 150 ft. W line, 300 ft. S line, Anderson Sur. ..... S.D. 1,305 ft.
W. D. Roan et al's No. 1 D. C. Kelly, 1,522 ft. from N line and 168 ft. from E line of U. Sanders Sur., near Carlos ..... Derrick.

HARDIN COUNTY

Wilcox Oil & Gas Co.'s No. 1 Sternberger, 1,328 ft. N of S line and 1,311 ft. W of E line of C. Dorsey Sur. No. 1 ..... Spud.

HARRIS COUNTY

C. C. Foster and others' No. 1 H. K. Johnson, 2,000 ft. from S line and center of E and W lines of G.C.&S.F. Sur. ..... Rigging up.
Glenn H. McCarthy's No. 2 Preston on 80 ac. in Sec. 2, Blk. 9, 4 miles W of LaPorte ..... Location.
J. A. Hodges' No. 1 Scott, 200 ft. S, 900 ft. W of intersection of Crosby Huffman, F. Rankin Sur. ..... T.D. 6,275 ft.; S.D.
Imperator Oil Co.'s No. 1 Brooks Est., 7,400 ft. S and W of NE cor. of R. & R. Vince Sur. ..... Derrick.
W. U. Paul's No. 1 E. M. House, 2,200 ft. N and 1,000 ft. E of NE cor. of E. Benson Sur. in M. Magruder Sur. ..... Set 10-in. at 1,000 ft.
J. E. Seiber's No. 1 Tyrell & Gareth, 2,500 ft. from E line and 2,400 ft. from N line of survey, Lot 18, Blk. 20, Highland Subd., Ashbell Smith Sur. ..... Drlg. gumbo 4,778 ft.

JACKSON COUNTY

Encio Gas Co.'s No. 1 Siedel & Simmons, 150 ft. from SW line or 300 ft. NE at right angles from No. 1 Toney, in Raymond Musquiz Sur. ..... T.D. 1,177 ft.; prep to drill plug.

JASPER COUNTY

Louis Franklin's No. 1 Cartwright, 360 varas E line and 740 varas S line of Lot 19, Edward Legrande Sur. ... Drlg. 760 ft.

JEFFERSON COUNTY

Gulf Prod. Co.'s No. 1 I. W. Jumper, 700 ft. W, 350 ft. S of NE cor. of 260-ac. tract in W. H. Smith League. Spud.
Lucky Strike Oil Co.'s No. 1 Walker, D. Easley Sur., 2,100 ft. N, 1,400 ft. E of NW cor. of Lot No. 13 .... S.D. 1,708 ft., shale and lime
Sun Oil Co.'s No. 1 H. Long, 1,500 ft. N line, 990 ft. E line of lease ..... T.D. 7,138 ft.; W.O.C.

LIBERTY COUNTY

Extension Oil Co.'s No. 1 J. A. Lovett, 200 ft. from E and 800 ft. from S line of lease, P. P. Deevers Sur... T.D. 2,095 ft.; S.W. sand; S.D.
Gulf Prod. Co.'s No. 2 Kirby, John Pleasants Sur., 1,866 ft. S of No. 1 ..... Hard shale 8,734 ft.; P.B. 5,600 ft. and cmtd.
Gulf Prod. Co.'s No. 4-C Kirby, 1,700 ft. due W of No. 1 discovery well in John Pleasant Sur. ..... Rigging up.
H. Sample's No. 1 Security Trust Co., 466 ft. from S and E lines of N 600 ac. of Lot 3 of H. Sample Subd. of J. Faulk Sur. ..... Drlg. 6,100 ft.
Thomas et al's No. 1-A Eicke, 660 ft. from W line and 2,350 ft. from S line of tract in Green Sur. ..... T.D. 5,058 ft.; D.S. test 5,025 ft., ¼-in. choke, 5 min., 8 thribbles mud; S.D. orders.

MADISON COUNTY

Hall Edwards et al's No. 1 Fulcher, 1,161 ft. from E line and 1,633 ft. from N line of Fulcher Sur. ..... Rigging up.

MATAGORDA COUNTY

Dr. Griffith's No. 1 fee, 3,000 ft. from N line and 3,000 ft. from W line of Wm. E. Bell Sur. ..... Rigging up.
Oils Consolidated's No. 2 Hawkins, 200 ft. due NE of No. 1 well ..... T.D. 5,530 ft.; R.U. to deepen.
United North & South Dev. Co.'s No. 1 Unit 4, Buckeye farm, J. C. Keller league, 214 ft. N line and 202 ft. E line of lease ..... T.D. 7,871 ft.; tested S.W.; S.D. to perforate screen.
United North & South Dev. Co.'s No. 1 Unit 6 (No. 2 Stoddard), 25 ft. each way out of NW cor. of Lot 19, Buckeye townsite ..... T.D. 9,457 ft.; shot D.S. 5,750 ft.; to sidetrack at 5,500 ft.
United North & South Dev. Co.'s No. 1 Unit No. 58, 250 ft. N and 200 ft. W of SE cor. of Unit No. 58 ..... Derrick.

MONTGOMERY COUNTY

Baker et al's No. 1 Benker, D. James Sur. ..... O.T.D. 4,921 ft.; sidetracked 2,823 ft.; sand 4,645-67 ft.; T.D. 4,690 ft.; Schlumberger test showed S.W.
Cooper & Smith's No. 1 Post, Daniel Roper Sur. ..... Show gas 3,694-3,705 ft.; drlg. 3,890 ft.
cor. 565-acre tract, T. Taylor Sur. ..... Rigging up and drlg. water well.
Humble O. & R. Co.'s No. 1 Texas Long Leaf Lumber Co., 466 ft. out of SE cor. of 2,000-acre tract in Walker County, S.L. Sur. ..... Coring sand 5,729 ft.
Steen Drlg. Co.'s No. 1 Long Bell Lbr. Co., 440 ft. S and E from NW cor. of Wilson Barker Sur. ..... Top Cockfield 5,815 ft.; sand 5,867-69 ft., sand 5,873-77 ft.; D.S. test 5,855-77 ft. showed 350 lbs. pressure with 2 gals. dist. and 2 gals. mud in 4 min.; coring 5,931 ft.; D.S. test 5,873-84 ft., 575 lbs. pressure, 15 min., 1 joint brown dist., ¼-in. choke on top, ⅝-in. choke on bottom; D.S. test 6,016-53 ft.; showed 23 thribbles salt water, 11 min., 250 lbs.; sidetracked while running pipe; P.B. 2,300 ft.; D.S. test 5,957-63 ft. failed; T.D. 6,041 ft.; S.W.; P.B. to 5,840 ft.; to comp. as gas well

NACOGDOCHES COUNTY

Dick Schwab's No. 1 Rambin, J. Simpson Sur. ..... T.D. 4,850 ft.; S.D.

ORANGE COUNTY

Blue Line Oil Co.'s No. 1 Godwin, Richard Ballew Sur., 300 ft. from E line and 150 ft. from NE line of Godwin 20-acre tract ..... S.D. shale 1,255 ft.
Texas Louisiana Oil Co.'s No. 1 Starks, 2,450 ft. N of NW cor. M. Delano Sur. 68, 10,500 ft. E at R/A .... S.D. 5,035 ft.

POLK COUNTY

Alpha Pet. Co.'s No. 1-B Kirby & West, 3,000 ft. E of Schwab's No. 2 and 150 ft. N of S line of 100-acre tract and survey in G. S. Thomas Sur. ..... Drlg. 315 ft.
Howard Dailey et al's No. 1 Z. B. Knox, 1,450 ft. W and 1,920 ft. S of NE cor. of F. Chairs Sur., 1¼ mile NE of Corrigan ..... Derrick.

REFUGIO COUNTY

C. B. Bunte's No. 2 Rook, 12,400 ft. from W and 11,500 ft. from N line of Antonio De Lavina Sur. ..... Drlg. 4,480 ft.
Bunte's No. 3 Rooke, Antonio De Lavina Sur. ..... T.D. 5,010 ft.; S.D. orders.
Cox et al's No. 1 F. W. Bissett, J. Crockett Sur. ..... Coring 5,250 ft.
Heard-Holland Oil Co.'s No. 1 Peck, 366 ft. N and W out of NW and SW of Bonnie View Subd. ..... Cored 5,183-93 ft.; 7-ft. recovery shale and sand carrying wtr. and some oil; reaming to core deeper.
Humble Oil & Ref. Co.'s No. 13 O'Connor, 933 ft. NE of No. 12 and 933 ft. NW of No. 11 on 5,545-acre tract in John Keating Sur. ..... T.D. 3,190 ft.; P.B. 3,016 ft.; W.O.C.
Humble O. & R. Co.'s No. 14 O'Connor in John Keating Sur. ..... Drlg. shale 3,212 ft.
G. Jeffries' No. 1 James F. Power, 750 ft. from N and 1,812 ft. from E lines of 500-acre lease in J. J. Garza and J. Vidaurri Sur. ..... Drlg. gumbo 1,965 ft.

SAN AUGUSTINE COUNTY

Fidelity Exploration Co.'s No. 1 Bryan & Flourney, 1,926 ft. from N and 725 ft. from E lines of Sec. 14, S.P.R.R. Sur. ..... T.D. 2,005 ft.; S.D. to clear title

SAN JACINTO COUNTY

Darby Jones' No. 1 McBee ..... T.D. shale 2,950 ft.; S.D.
Turnbull & Irwin's No. 1 Foster Lumber Co., 440 ft. W of Shell 100-acre tract and 150 ft. S of Evergreen road in NW part of Wm. Dobie Sur. ..... Drlg. 2,475 ft.

TYLER COUNTY

Boone-Wallace & Lane's No. 1 Cruse ..... Moving in.

VICTORIA COUNTY

C.R.&G. Drlg. Co.'s No. 1 R. C. Roos, 486 ft. from N line and 1,666 ft. from E line of tract in M. A. Castanon Sur. ..... Reaming 4,960 ft.
Humble O. & R. Co.'s No. 1 Mitchell, 1,401 ft. from NE and NW lines of 5,000-acre tract in E. Benavides Sur. ..... Drlg. 2,800 ft.
Petrol Corp.'s No. 1 John Machalic, 1,330 ft. out of S cor. of 135-acre tract, Rafael Mancha Sur. ..... T.D. 2,875 ft.; set csg. 2,828 ft.
Texas Co.'s No. 2 McFaddin, 9,150 ft. S and 200 ft. E at right angles out of NW cor. of C. M. B. Hoyt Sur. ..... T.D. 2,025 ft.; prep. to W.O.; R.U.

WALLER COUNTY

Amerada & Stanolind Oil & Gas Co.'s No. 1 Mary Manor, C of Sec. 93, Blk. 1, H.&T.C. Sur. ..... Coring sandy shale 6,363 ft.
L. W. Capps and C. J. Sloan's No. 1 Vaughn, 1,200 ft. N of Kirby's No. 1 Vaughn, J. MacFarland Sur. No. 46 ..... T.D. 2,853 ft.; shale; S.D.

WHARTON COUNTY

Pure Oil Co.'s No. 2 Wallace Houston, 1,511 ft. SW, 466 ft. SE of N cor. of Wallace Houston 160-ac. tract, in the T. W. Heard Sur. No. 28, Abst. 509 ... Location.
Pure Oil Co.'s No. 2 Lancaster, 1,320 ft. NW of SE line and 1,476 ft. SW of NE line of tract in Sec. 23, Morris & Cummings Sur. ..... T.D. 5,147 ft.; comp. 395 bbls.; 28/64-in. choke.
Pure Oil Co.'s No. 2 Stewart, Morris & Cummings Sur., Sec. 25, 990 ft. out of SW cor. of 160 acres ..... Drlg. 7,822 ft.

SOUTH LOUISIANA

ACADIA PARISH

Edwards Drlg. Co.'s No. 1 Daigle, NE cor. of SE of Sec. 24-7s-1e ..... Spud.
Rhodes Drlg. Co.'s No. 1 Latrell ..... S.D. 2,280 ft.
Superior Oil Co.'s No. 1 P. O. Hernandes, 990 ft. W, 990 ft. S of NE cor. SE Sec. 34-8s-3e ..... T.D. 8,916 ft.; perforation 7,845-50 ft.; flowing 31¼ bbls. hour, 12/64-in. choke, 1,360 lbs. pressure; comp. 829 bbls. daily.

AVOYELLES PARISH

Hass & Stokes' No. 1 Hass, from NE cor. SE Sec. 28 go along E line of Sec. 28 2,486 ft. to point on highway, thence 84° E on highway for 286 ft., thence N 37° E for 4,426 ft., then N 45° E 226 ft....Rigging up.

BEAUREGARD PARISH

Federal Pet. Co.'s No. 1 Lutcher-Moore, 467 ft. S and 467 ft. E of the NW cor. of Sec. 4-6-12 .....Drlg. 880 ft.
Humble Oil & Ref. Co.'s No. 1 Long Bell, 200 ft. E of W line and 2,640 ft. S of N line of Sec. 11-5s-7w ....T.D. 9,302 ft.; abd.
F. W. Martin's No. 1 J. E. Cochran, SE cor. of NE of Sec. 34-4s-12w (W part of county and 6 miles S of Merryville) .....Shale 4,040 ft.; S.D.

CALCASIEU PARISH

Fred Oil Co.'s No. 1 Faust, 646 ft. N, 300 ft. W of SE cor. of NW of SE Sec. 26-8s-10w .....Drlg. 2,810 ft.
Steinberger Pet. Co.'s No. 1 Drew, 330 ft. out of NW cor. of NE¼ of Sec. 26-10s-11w, 6½ miles SW of Sulphur .....Location.
Union Sulphur Co.'s No. 2 Barbe, 279 ft. S and 350 ft. W of NE cor. of SE of Sec. 11-9s-8w .....Drlg. 2,210 ft.

IBERIA PARISH

Y. D. Spell's No. 1 Bernard, 5,138 ft. SW cor. along western boundary line, then in NE direction 1,140 ft. along N line of Bernard land, 52 ft. S of well in Sec. 54-12s-7e .....Drlg. lime and shale 3,791 ft.

IBERVILLE PARISH

Gross Pet.'s No. 1 Angelloz .....Drlg. gumbo 2,100 ft.

JEFFERSON DAVIS PARISH

Humble O. & R. Co.'s No. 3 Devilbiss, 1,399 ft. W, 466 ft. S of NE cor. Sec. 14-9s-4w .....Moving in.
Shell Pet. Corp.'s No. 1 Jernigan, 330 ft. E, 660 ft. S, NW cor. Sec. 12-9s-4w .....Rigging up.
Shell Pet. Corp.'s No. 1 Kratzs, 660 ft. S, 330 ft. W of NE cor. NW Sec. 12-9s-4w .....D.S. test 3,659-77 ft., 12 min., 5½ bbls. 37 grav. P.L. oil, 70 lbs. pressure; cored to 3,682 ft.; flow 1,035 bbls. 24 hrs., 18-64-in. choke; T.P. 1,500 lbs.; C.P. 1,525 lbs.; 2,000 bbls. in storage; shut in.
Tide Water Oil Co.'s No. 1 Mrs. A. Bourgeosis, 250 ft. E and 205 ft. S of C of Sec. 28-9s-5w .....Drlg. shale 4,635 ft.

LAFOURCHE PARISH

Barnsdall Oil Co.'s No. 2 Harang Plantation .....Drlg. sand 6,250 ft.
R. L. Gay, trustee's No. 1 Godchaux, 3,920 ft. N and 1,746 ft. E in common cor. of Lots 34 and 26, Twp. 15s-19e .....Moving in rig.
Southern Sulphur Corp.'s No. 1 D. L. Lagraize, 800 ft. E of NW cor. of Lot 7, thence 250 ft. S of Sec. 26-21s-22e .....Spudded and S.D.

PLAQUEMINES PARISH

Venice Corp.'s No. 1 Burras .....S.D. 40 ft.; prep. to start up.

ST. BERNARD PARISH

Southern Sulphur Corp.'s No. 1 Lake Lery, 400 ft. W, 500 ft. N, SW cor. Sec. 28-13s-15e .....Gumbo 2,867 ft.; S.D.

ST. LANDRY PARISH

Bailey Gaunce's No. 1 Lewis, 300 ft. N and E of SW cor. of NW of NE of Section 29-5s-6e (workover) ...T.D. 5,017 ft.; S.D.
H. H. Hotchins Lbr. Co.'s No. 1 Whiteman Lbr. Co., 250 ft. out of SW cor. NE Sec. 15-5s-6e .....S.D. 3,696 ft.

ST. MARTIN PARISH

Texas Co.'s No. 6 St. Martin Land Co., 660 ft. S and 500 ft. W of NE cor. SE Sec. 17-8s-7 .....Drlg. shale 5,911 ft.

ST. MARYS PARISH

Black et al and Edwards Drlg. Co.'s No. 1 Chetimancha, Sec. 34-13s-9e, 219-acre tract approximately 500 ft. at right angles SE and SW lines of tract .....Drlg. shale 4,700 ft.

TERREBONNE PARISH

Texas Co.'s No. 1-B State-Bay Junop, 2,200 ft. N, 950 ft. E of SW cor. Sec. 27-21s-14e .....Drlg. sand 6,602 ft.
Texas Co.'s No. 13 State-Caillou Island, 500 ft. SW of No. 11 .....Rigging up.
Texas Co.'s No. 11 Lake Pelto, 1,600 ft. SW of No. 5 ...Driving piling.
Texas Co.'s No. 3 School Board, 2,630 ft. S and 1,384 ft. E of NW cor. of Sec. 16-22s-18w .....Rigging up.
Texas Co.'s No. 4 School Board, Sec. 16-22s-18w .....Drlg. shale 3,784 ft.

VERNON PARISH

Robt. K. Williams, Jr.'s No. 1 Liano Del Rio, 1,185 ft. S, 1,000 ft. W of NE cor. Sec. 7-1n-9w .....Rigged up and S.D.

Wildcat Operations in Louisiana-Arkansas

(Continued from Page 78)

MOREHOUSE PARISH

James A. Noe's No. 1 Dalton, 3,445 ft. N, 805 ft. W of common cor. Sec. 41-21-5e .....Junked hole; skidded; drlg. 1,375 ft.
Zeiger & Bacon's No. 1 Crossett, 400 ft. N, 300 ft. W, SE cor. Sec. 41-23-6e .....S.D. 2,535 ft.

NATCHITOCHES PARISH

Penn Sou. Pet. Co., Inc.'s No. 1 Chopin Lbr. Co., 275 ft. N and W, SE cor. NE SW Sec. 4-5n-5w.....S.D. 2,625 ft.

OUACHITA PARISH

Ark.-La. P. L. Co.'s No. 3 Rea-Green, 2,720 ft. S, 1,750 ft. W, NE cor. Sec. 4-18-4e .....Set 6⅝-in. 2,162 ft.
Carbons Consolidated's No. 4 Cole, 662 ft. S, 1,969 ft. W, NE cor. Sec. 36-20-4e .....Set 12½-in. 200 ft.; drlg. 530 ft.

RED RIVER PARISH

Kincaid & Kelly's No. 1 Ober, 315 ft. N, 357 ft. W, SE cor. NW SE Sec. 5-14-10 .....Set 10-in. 84 ft.
A. D. Mytiler's No. 1 La. Delta Pecan Co., 1,700 ft. N, 160 ft. E, SW cor. Sec. 27-13-11 .....Tested S.W. 802 ft.
Oynett et al's No. 1 Thomas, 330 ft. S and E, C Sec. 34-13-8 .....S.D. for fuel 740 ft.

SABINE PARISH

D. D. Alexander's No. 1 Brown est., 330 ft. N and E, SW cor. Sec. 9-9-11 .....Dry and abd. 3,464 ft.
J. F. Anderson's No. 1 Burkett, 125 ft. N, 665 ft. E, SW cor. NW Sec. 10-9-13 .....W.O.S.R. 1,993 ft.
J. W. Bettis et al's No. 1 Frost Lbr. Ind., 330 ft. S and W, NE cor. SW Sec. 15-9-13 .....Rigging up.
R. B. Campbell et al's No. 1 Cook Land Co., 150 ft. N, 300 ft. W, SE cor. NW NW Sec. 35-10-13 ..... W.O. csg. 1,586 ft.
Earl P. Halliburton's No. 2 Barr, 330 ft. S, 990 ft. E, NW cor. Sec. 15-9-13 .....Swbng. 2,000 ft.
Helena O. & G. Co.'s No. 6 Burkett, 330 ft. S and E, NW cor. NE Sec. 10-9-13 .....Tested dry 1,989 ft.
Zan Lloyd's No. 1 Henderson, 330 ft. N and W, C Sec. 29-9-13 .....W.O.S.R. 2,031 ft.
H. C. Maulding's No. 2 Alford, 330 ft. N and E, SW cor. NW NW Sec. 18-7-10 .....S.D. 2,750 ft.
Dr. O. B. Hicks' No. 1 Neal, SE SW SE Sec. 18-9-12....Set 10-in. 40 ft.
Parker et al's No. 1 Henderson, 330 ft. S and E, NW cor. SE NE Sec. 29-9-13 .....W.O.S.R. 1,920 ft.
L. L. Posey's No. 2 Burkett, 330 ft. S and E, NW cor. NE NW Sec. 10-9-13 .....W.O.S.R. 1,984 ft.
Preston & Stinron's No. 1 Slay, 660 ft. W, 330 ft. N, SE cor. NW SE .....Fishing for D.S. 1,984 ft.
W. H. Rowe et al's No. 1 Craig, 330 ft. S and E of center Sec. 22-9-13 .....S.D. 1,200 ft.
J. A. Stinson's No. 1 Whitney Corp., 330 ft. S and W, NE cor. Sec. 8-9-13 .....W.O.S.R. 2,014 ft.
Stumpff & McFall's No. 1 Paul estate, Sec. 10-9-13 .....Tested S.W.; S.O. 1,976 ft.
Windsor Oil Co.'s No. 2 Barr, 330 ft. N and E, SW cor. NW Sec. 15-9-13 ..... Location.

RAPIDES PARISH

Ben Banner's No. 1 Bentley Lbr. Co., 2,640 ft. E, NW cor. Sec. 11-4n-5w .....Washing to bottom 1,640 ft.
Evans & Collingsworth's No. 1 Hickman, 330 ft. S and E, NW cor. Sec. 40-4-1e .....S.D. 2,130 ft.

Arkansas

COLUMBIA COUNTY

O. F. Whittaker's No. 1 Hall, C SE NE Sec. 10-15-20...Rigged up and S.D.

CONWAY COUNTY

Sou. Union Gas Co.'s No. 1 Feldman, C SW SW Sec. 6-5n-17w .....Setting 8¼-in. 2,504 ft.

HEMPSTEAD COUNTY

A. H. Bagnelle's No. 1 Trattner & Rhinehart, Sec. 2-12-26.S.D. 1,425 ft.

LAFAYETTE COUNTY

Douglas Lawn's No. 1 Camp, 330 ft. S and W, NE cor. SW SE Sec. 14-15-23 .....Coring 1,619 ft.
George W. Harper's No. 2 Bodcaw, 150 ft. S, 550 ft. E NW cor. SW NW Sec. 16-15-23 .....S.D. 1,216 ft.
C. V. Lenz' No. 1 Foster, 330 ft. S, 150 ft. E, C Sec. 9-15-25 .....S.D. 2,620 ft.

MILLER COUNTY

Duluth-Ark. Oil Co.'s No. 2 Beck, 330 ft. S and E, NW cor. SE SW Sec. 34-15-26 .....Bailing 2,811 ft.
Fitzwater et al's No. 1 Norson, SW cor. SE SW Sec. 30-15-27 .....S.D. 3,177 ft.
King Oil Corp.'s No. 1 C. H. Schroder, 200 ft. N, 330 ft. E, SW cor. SW NE Sec. 34-14-28 .....S.D. 2,000 ft.
C. E. Murdock's No. 1 E. L. Beck, 330 ft. N and E, SW cor. SE SE Sec. 33-15-26 .....W.O.S.R. 2,929 ft.
Frank Roe's No. 1 Olivet, NE cor. NE SE Sec. 4-16-26..Dry and abd. 2,954 ft.
Texarkana Oil Corp.'s No. 1 H. E. Beck, 330 ft. N and E, SW cor. SW SW Sec. 34-15-26 .....W.O.S.R. 2,923 ft.
Lee Timberlake et al's No. 1 E. L. Beck, 150 ft. N and E, SW cor. NW SE Sec. 33-15-26 .....Drlg. 1,890 ft.
J. K. Wadley's No. 1 Deckerman, 200 ft. N, 330 ft. E, SW cor. NW Sec. 24-17-27 .....Drlg. 4,125 ft.
E. L. Young, Tr.'s No. 1 Patterson, SE cor. SE NE Sec. 5-19-28 .....Arranging to set 6-in. 3,655 ft.

OUACHITA COUNTY

L. L. McDonald's No. 1 J. A. Robertson, 200 ft. S and E. NW cor. NE NW Sec. 25-15-16 .....W.O.S.R. 2,092 ft.
L. L. McDonalds' No. 1 Arnold & Doyle, 150 ft. N and W, SE cor. NE SW Sec. 23-15-16 .....W.O.S.R. 2,131 ft.

UNION COUNTY

E. R. Henderson's No. 2 J. H. Ogden, 330 ft. S and E, NW cor. SW SE Sec. 32-18-14 .....Bailing 2,208 ft.
E. R. Henderson's No. 1 Vines, 330 ft. N and W, SE cor. SW SE Sec. 29-18-14 .....P.B. to 2,161 ft.
Mrs. R. K. Jones et al's No. 1 J. Davis, 330 ft. N and W, SE cor. NW NW Sec. 28-16-14 .....Drlg. 2,332 ft.
McCreslenn Oil Co.'s No. 2 Atkins, 330 ft. S and W, NE cor. SW NE Sec. 3-18-13 .....Set 10-in. 160 ft.
Tubal Pet. Co.'s No. 1 Gaddy, 340 ft. N and E, SW cor. SE NW Sec. 14-17-14 .....S.D.; W.O. 3,416 ft.

Mississippi

FRANKLIN COUNTY

E. R. Ratcliff's No. 1 Banks, SE cor. SE Sec. 20-5n-2e..Drlg. 2,550 ft.

GREENE COUNTY

United Gas Public Service Co.'s No. 1 Davis, C NW Sec. 30-1n-5w .....Drlg. 6,310 ft.

JEFFERSON COUNTY

Pelican Oil & Gasoline Co.'s No. 1 Steel Bayou Corp., 400 ft. N, 350 ft. E, SW cor. NW Sec. 14-12n-8w.....Rigging up.

WALTHALL COUNTY

Mutual O. & Gas Co.'s No. 1 Boyd, Sec. 24-2n-9e, SW cor. SW SE .....Moving in rig.

WARREN COUNTY

Orbet Drlg. Co.'s No. 1 R. L. Parker, 300 ft. E CWL, Sec. 14-14-1e .....S.D. 3,169 ft.

Louisiana-Arkansas Proven Areas

North Louisiana

CADDO—RODESSA

Company, well, farm name, section and block—	Remarks:
R. W. Norton's No. 1-B J. B. French, 660 ft. S and E, NW cor., Sec. 34-23-16	Testing 5,400 to 5,900 ft.
United Gas Pub. Ser. Co.'s No. 1 Deer, 1,320 ft. N and W, SE cor. Sec. 24-23-16	Set 7-in. 5,534 ft.

SABINE PARISH—ZWOLLE

Alexander & Cane's No. 1 Fogman, SE cor. N½ SW NE Sec. 18-7-11 .....S.D. 750 ft.
Ivan A. Allen's No. 1 La. Long Leaf, 330 ft. N and W, SE cor. NW SE Sec. 12-7-11 .....S.D. 750 ft.
Dyer et al's No. 1 McCollister, 330 ft. S and E, NW cor. SW NE Sec. 24-7-12 .....S.D. 1,100 ft.
Foster & Hartman's No. 1 Bowman-Hicks, 330 ft. S and E, NW cor. NW NE Sec. 10-7-12 .....Drlg. plug 2,416 ft.
E. D. Holcomb's No. 1 Porter, 330 ft. S, 330 ft. W, NE cor. SE Sec. 7-7-11 .....Dry; W.O. 2,580 ft.
M. J. Kissick's No. 1 Barr, 350 ft. S and W, NE cor. SW SE Sec. 6-4-11 .....Drlg. 3,350 ft.
Magnolia Pet. Co.'s No. 2 Gindratt, 330 ft. N, 320 ft. E, SW cor. SE Sec. 30-8-11 .....T.A. 2,485 ft.
H. C. Maulding's No. 2 DeLatin, 330 ft. S and E, NW cor. NE SE Sec. 3-7-11 .....Rigging up.
Monroe Prod. Co.'s No. 4 Sabine Lbr. Co., 330 ft. N and E, SW cor. SE NW Sec. 7-7-11 .....Tested dry; W.O. 2,468 ft.
Geo. L. Pace's No. 5 Greer, 330 ft. S and E, NW cor Sec. 32-8-11 .....Testing 2,400 ft.
Geo. L. Pace's No. 1 Garner, 330 ft. N and W, SE cor. SW NE Sec. 15-7-11 ..... W.O.S.R. 2,591, ft.
Pelican Nat. Gas Co.'s No. 31 La. Long Leaf, 311 ft. N, 323 ft. E, SW cor. Sec. 29-8-11 .....Comp. flowing 400 bbls. 2,500 ft.
Pelican Nat. Gas Co.'s No. 29 4-L Co., Sec. 29-8-11.....Tested dry; W.O. 2,660 ft.
Pelican Nat. Gas Co.'s No. 32 La. Long Leaf, 314 ft. S, 35 ft. W, NE cor. W½ NW Sec. 31-8-11.....Set 6-in. 2,235 ft.
Service Drlg. & Royalty Co.'s No. 6 E. E. Smith, 670 ft. S, 1,079 ft. E, NW cor. NW SE Sec. 7-7-10.....Used acid 2,652 ft.
Ben F. Smith's No. 1 Sabine Lbr. Co., 330 ft. N and W, SE cor. NE NE Sec. 12-7-12 .....Dry and abd. 2,500 ft.
Tex-La-Ark Oil Co.'s No. 1 Pickering Lbr. Co., Sec. 8-8-12 .....S.D. 1,050 ft.; repair boiler.
Texas Co.'s No. 7 Stille, 330 ft. S, 330 ft. E, NW cor. SW Sec. .....Drlg. 2,511 ft.

Mississippi

HINDS COUNTY

Alexander & Weaver's No. 1 Simpson, Sec. 25-5n-1e....Set 5 3/16-in. 2,406 ft.

East Texas (Border Counties)

CASS COUNTY

United Gas Public Service Co.'s No. 1 Walton, John Coleman Sur. .....Rigging up.
R. K. Kamon et al's No. 1 Savage, Mary Patterson Sur...Tested dry 3,806 ft.

HARRISON COUNTY

R. C. Payne et al's No. 1 Lowery, E. D. Spain Sur. .....S.D. 4,093 ft.

PANOLA COUNTY

Acre & Rotunda's No. 1 Burnett Lbr. Co., J. H. Mallory Sur. .....Drlg. 2,100 ft.
Givens & Holloway's No. 1 Wooten Est., Winnie Mann Sur. .....S.D. 750 ft.
R. W. Price's No. 1 Crawford, J. A. Williams Sur. .....Rigging up.

SHELBY COUNTY

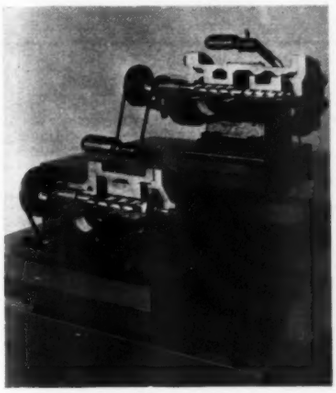
Bush Oil Int.'s No. 1 Windham, W. M. Blackburn Sur...S.D. 3,366 ft.
Turner & Neil's No. 1 Pickering Lbr. Co., P. W. Harvey Sur. .....Set 10-in. 65 ft.

NEW AND IMPROVED EQUIPMENT

Smooth Flow of Oil Gained in the De Laval-IMO Pump

There are no valves and no reciprocating parts in the De Laval-IMO pump, designed primarily for fuel, lubricating and heavy crude oils. Nor do the rotors trap oil. According to the manufacturer, the De Laval Steam Turbine Co., Trenton, N. J., there is nothing to disturb the smooth, even flow of oil.

The pump is of simple construction, having not more than three moving parts, consisting of a central or power rotor ex-



tended for connection to the driving shaft and two idler or sealing rotors which are proportioned and designed so that pilot or timing gears are not required.

The convex surfaces of the threads on the power rotor mesh with concave surfaces of the idler rotors, making practically a fluid-tight closure between the rotors, while preserving clearances that are mechanically practicable. The rotors and the surrounding sleeves provide ample radial bearing surfaces so that separate bearings are unnecessary, and as the rotors are in hydraulic balance axially, no thrust bearings are required. All moving parts are in rotational balance. As there is only one shaft extension, only one stuffing box is used, and it is subject to only the pressure existing in the suction passage.

Mechanical losses have been reduced so that higher efficiencies are obtained. De Laval-IMO pumps are built in all capacities and for pressures exceeding 500 pounds per square inch.

NEW VALVE MODELS ANNOUNCED

The Homestead Valve Manufacturing Co., Coraopolis, Pa., has announced improved models of valves, particularly designed for use in the petroleum industry and others in which service requires the use of a wide variety of valve metals. Special charts have been designed to show proper types of valves for various requirements. Regardless of materials used, Homestead protects all valve seats and designs each unit in such a way that no grit, dirt, sand or other corrosive or abrasive materials can come in contact with the seating surfaces. The patented lock and cam arrangement for seating plug valves is another feature peculiar to Homestead and its value lies in the fact that it presses the plug firmly and automatically into the seat when the valve is in the closed position.

The Diamond Metal Co., Houston, Tex., has established an industrial division making Diamond hard metal available for tools undergoing wear under normal conditions. C. A. Tirado is in charge of this new division.

Notes About Trade Literature

"Matched Thread Perfection" is the title of an 18-page illustrated booklet prepared for distribution by the Youngstown Sheet & Tube Co., Youngstown, Ohio.

—

"Here's evidence of improved quality through better temperature regulation," is the introductory statement of a 12-page folder issued by the Brown Instrument Co., Philadelphia, Pa.

—

A 16-page booklet on Enduro 18-8 stainless steel, describing its various uses, is sent on request by the Republic Steel Corp., central alloy division, Massillon, Ohio.

—

A circular obtainable from the Poole Foundry & Machine Co., Woodberry, Baltimore, Md., briefly describes improvements made in the Poole gear type, flexible coupling.

—

Introducing several new products, the Shull Perforating Co., 2750 Cherry Avenue, Long Beach, Calif., has issued a catalog of interest to drilling operators. It describes the company's new swab, two types of casing perforators, a new type of pressure bailer, a pressure perforation cleaner, tubing slips, etc.

—

Direct-current motors are the subject of a looseleaf bulletin designated as No. 167, Part 8, obtainable from the Wagner Electric Corp., 6400 Plymouth Avenue, St. Louis, Mo. It is profusely illustrated, and all motor design and construction details are described.

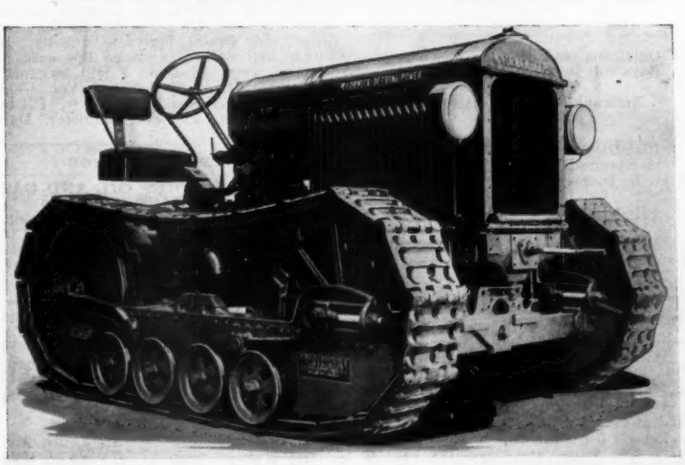
ARC-WELDING HEAD IMPROVED

Simplicity of design, control, adjustment to work and maintenance are features of the improved General Electric type WFA automatic arc-welding head now available to industry. One small motor drives the electrode feed rollers through a simple worm reduction gear and three-speed transmission. At any of the three speeds, selected to suit electrode size, current and rate of deposition of metal, the electrode is fed at a uniform rate and the arc voltage is accurately maintained. One small rheostat is the only adjusting element necessary. This means quick and accurate control of the electrode feed, as all other operations are fully automatic.

H-O-H PROPORTIONING UNIT

D. W. Haering & Co., Inc., 3408 Monroe Street, Chicago, manufacturer of H-O-H water treatments, is introducing the new H-O-H proportioning unit, an automatic proportioning machine which makes the accuracy of the pitot tube principle practical. This machine will feed liquid chemicals into liquid lines under varying conditions of pressure and in any quantities desired. The machine automatically starts, stops and feeds in proportion to flow. The only manual attention required is the recharging of the unit, which may be accomplished in less than five minutes and the reagent tanks are made of sufficient size to require this operation only at long intervals.

Tractor Moves Backward and Forward With Ease



Pipe line contractors have been asking for a pipe line tractor which would move backward and forward with equal agility. Such a tractor is now introduced by the Trackson Co. in its new Model GI-30, with directional speeds, three forward and three in reverse.

The tractor is especially adapted for pipe line work. It provides for actual inbuilding of booms, front-end winches, earth-boring machines, etc., which are made especially for this machine. This simplifies the construction of the equipment, increases its dependability, and reduces its cost.

The new model develops 30 drawbar horsepower. The mechanical features have been studied to insure minimum repair and service problems in the field.

A low center of gravity and wide spacing between the crawlers provide excellent balance without excess counterweight. The ample clearance between the crawlers and motor permits quick and secure attachment of the boom equipment, also easy access to all external moving parts.

The Model GI-30 is also available with four speeds forward and one reverse, as optional equipment.

Ingenious Display Device Demonstrates Boll-Weevil

A unique device for demonstrating "Boll-Weevil" tongs is being used by the manufacturers, J. H. Williams & Co., 75 Spring Street, New York. An animated

display board shows a mechanical arm operating a tong exactly as in actual service. First a series of six bites are taken on the rotating pipe section, demonstrating the action of the tongs in making up pipe. During this operation the caption "Making up" is illuminated. At about the fifth stroke the caption "Watch action reverse" illuminates and the tong shifts over into the position illustrated in the photograph and the mechanical arm lifts up on the handle demonstrating the breaking out action of the tongs. During this period the caption "Breaking out" is illuminated.

The action of the tongs is just as it would be in the hands of an operator. Teeth actually engage the pipe section and rotate it through the power applied to the tong handle. Since the "Boll-Weevil" tong is reversible in its action, and it is necessary when changing directions of pipe rotation to shift the tong head to engage the teeth at the opposite end of the jaws, an ingenious mechanism was required for this feature.

Four-Wheel Drive Truck of High Speed Announced

A new 1½-ton capacity four-wheel drive truck, designated as Model HS, has been announced by the Four Wheel Drive Auto Co., Clintonville, Wis. The new model is powered with a big 84-horsepower engine, which, with its standard-gear ratio, provides for a road speed with full load at 47 miles per hour.

The power from the engine is fed to the four-speed transmission through a 12-inch single plate clutch, and from the transmission main shaft level the power is transferred to the center differential located in the subtransmission, where it is divided and distributed to each axle. Full compensation is provided through the use of the center differential for rounding corners and in going over uneven ground.

Both the front and rear axles are full floating with spiral bevel gear final drive and 6.50 tires. Duals on the rear axles, are standard equipment. The cab is of distinctive appearance and is also furnished as standard, as are hydraulic brakes.

Canadian Fields

(Continued from Page 79)

while drilling, with additional bursts of gas as drilling progresses.

Offsetting Highwood-Sarcee's No. 1 to the west, Myers & Wright's No. 1, LSD 14, Section 21-18-2w5, is drilling below 103 feet. Further south, Union-Freehold Corp.'s No. 1, LSD 8, same section, is reported resuming from 2,758 feet after cleaning out, with 13⅜-inch casing run to bottom. Highwood Royalties' No. 1 Oliver, LSD 3, same section, is reported drilling new hole after setting surface pipe at 124 feet. Prairie Royalties' No. 1, LSD 5, has cellar dug. Carleton Royalties' No. 1, LSD 2, has derrick up, but will not likely drill till Highwood-Sarcee's No. 1 is completed.

Central Turner Valley

In the Central Turner Valley, New McDougall-Segur Oil Co.'s No. 7, Section 12-20-3w5, is rigging up for a test of the McDougall-Segur crude oil sand. Roy Widney will have charge. Further south, Dome Oils' No. 2, LSD 16, Section 36-19-3w5, was pulling casing when the wooden derrick collapsed.

Reports current tnat Royalite Oil Co. was planning a drilling program of 10 wells for the Turner Valley Field have been denied by officials of the Imperial Oil production department.

Foothills Tests in Limestone

Since the development of wet gas and crude naphtha production by Royalite Oil Co.'s No. 4 in the Turner Valley Field nearly 10 years ago, considerable drilling has been done in various portions of the southern Alberta foothills in the effort to develop similar production. According to figures compiled by B. F. Hake, chief geologist for the Nordon Corp., some 51 tests have been started in other areas of the foothills with this horizon as a more or less definite objective. More than 143,000 feet of drilling has been done on these tests at an estimated cost of $3,500,000. Only 8 wells of the 51 penetrated the limestone. Of these, six were in the Highwood area of which the Pekisko Hills structure with the lime at 870 feet is considered the apex. Shows of oil and gas have been encountered in most of these tests, though none has yielded commercial production.

J. A. Harilstad, of Stanmore, Alberta, has traced a new potential oil-bearing structure in the Alberta foothills west of Calgary. The structure, as defined by Mr. Harilstad, extends for some 30 miles with a general northwest and southeast trend and lies between the Birch Ridge structure, on which Elbow Oils' No. 1 is drilling, and the Herron structure, where Herron Petroleums' No. 1 was drilled years ago. The structure starts in Townships 11 and 22-5w5 and runs northwest to Township 25-8w5, and the formations are thought to be similar to those of the Turner Valley Field with outcrops showing indications of oil saturation. No drilling has yet been done.

Border Fields

On the Twin River structure in southern Alberta, Nordon-Roney's No. 2 Twin River, LSD 11, Section 2-2-20w4, has developed difficulties with pumping. The well has been making about 20 bbls. a day from the crude oil horizon at the Madison contact at 3,930 feet but this apparently does not represent complete production. The test may not be completed for several weeks.

On the Del Bonita structure west of Twin River, Multi-Structure Co. is reported locating a test to be drilled this summer. Lloyd Clinch is in general charge. Nordon Corp. has acreage and may drill.

Test on Watson Structure

An important new test will be started this summer on the Watson structure, west of Lundbreck, by Prairie Royalties, Ltd., of Calgary and Vancouver. Location has been made in LSD 3, Section 6-22-4w5, on acreage of Mar Jon Oil Co., and the well will be Prairie Royalties' No. 3.

Test Wilcox Structure

Blackfoot Co., Ltd., of Regina, will drill a test in southern Saskatchewan, in the Wilcox area about 43 miles south and east of Regina. Contract has been let to C. H. Withers, formerly of Kevin, Montana, who is also drilling for the Trail Blazer Oil & Gas Co. near Hudson Bay Junction, in northern Saskatchewan. The location for the Wilcox test will be in or near Section 24-13-20w2. The producing horizon is anticipated around 1,700 feet. A test drilled in 1913 was abandoned after reaching 1,450 feet.

Lloydminster Gasser

In western Saskatchewan, an official test of Lloydminster Gas Co.'s No. 1, LSD 6, Section 11-50-8w3, has been made by Edgar Swain of the lands and mines branch of the Saskatchewan department of natural resources. His test showed the well good for 16,800,000 feet a day. Two tests were used over the period of several hours and the well gained approximately its maximum pressure within five minutes, regarded as indicating a porous sand. The gas is dry and shows 949.8 B.t.u. No indication as to the thickness of the gas sand could be had, as the drill had merely penetrated the top of the sand. Altoba Exploration Co.'s No. 1 at Lone Rock, a little south of the Lloydminster gasser, is reported drilling.

Haldimand Gas Strike

In the Haldimand Field, Ontario, a local syndicate drilling on the Walter Gowland farm in Seneca Township has brought in a good gasser at around 600 feet, with initial open flow of 800,000 feet a day. These shallow gassers normally run from 50,000 to 150,000 feet a day. Two smaller gassers have recently been completed on the Frank Harrison and John Hanson farms near Blackheath.

The Domestic Gas Syndicate of Toronto is drilling in Seneca Township, Haldimand County, where Percy L. Jackson has a contract to drill three wells.

In Sarnia Township, Leo Wilson Syndicate's No. 1, deep test, in Lot 7, Concession 3, near Bunyan, is drilling near 2,400 feet without a show and will probably finish in a few days.

In Norfolk County, Prairie Oil & Gas Co. has two tests drilling in a new gas area a mile north and 2 miles west of Mabee's Corners.

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Royalties and leases in all fields, producing and non-producing, Kans., Okla., Tex. Get my big list before buying. James R. Haynes, Grantville, Kansas.

FOR SALE—Can offer several completed oil wells, East Texas Field, for $10,000.00 apiece up. Also have extra good Van and East Texas royalty of my own. My wife's estate has 120 acres in Upshur County, 5 miles north of Gladewater, close to the great East Texas field but not yet proven. One well down 2,500 feet within 400 yards of the eastern border of her farm, another down 1,100 feet within 1½ miles of the western border. Will offer only 20 acres, $50.00 per acre lease and $50.00 per acre royalty. If either well strikes pay sand this acreage becomes very valuable. I will buy producing royalty in East Texas, Van, Conroe, and Oklahoma fields. Dr. P. R. Knickerbocker, 3237 Westminister, Dallas, Texas.

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In area that will receive early development; 320 to 10,000 acre blocks—$1.15 per acre and up. L. W. Stieren, 1018 Alamo Natl. Bldg., San Antonio, Texas.

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The scene of the next big oil boom—The Permian Basin in West Texas and New Mexico—Can supply you with drilling blocks, close in acreage to Major Oil Companies drilling blocks or choice non-producing royalties located on geophysical highs—I have my own field men covering this area. Inquiries invited.
B. D. BUCKLEY
Paul Brown Bldg., St. Louis, Mo.

BROKERS—Well located leases and perpetual royalties at wholesale prices, small and large tracts. Write A. C. Smith. P.O. Box 927, Houston, Texas.

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NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton. Clovis, New Mexico.

WANTED—To buy abandoned oil leases 600 to 1,800 feet deep. E. R. Young Pipe Co., Neodesha, Kansas.

PROVEN OIL LEASE FOR SALE North 100 acres East ½ Section 5, Block A-43, Andrews County. Write or wire owner, David E. Coffman, Dallas, Texas.

Leases—Production

FULL working interest below three thousand feet reserved by advertiser about 160 acres and half interest in adjoining lease 129 acres—will trade part interest for NO less than one and up to three wells to be drilled to Wilcox. Sec. 4-16N-15E, Wagoner, Okla. John F. Bruns, 783 East 35 St., Brooklyn, N. Y.

WICHITA OIL DISTRICT BOOMING. Many new Pools recently discovered shallow depth. I have Wildcat Blocks on good geology near Oil Wells in this District and give acreage or sell one-half interest and complete wells. B. H. Hilburn, 915 Hamilton Building, Wichita Falls, Texas.

FOR SALE—Oil and gas leases in shallow territory, also settled production and many proven locations to drill. Drilling blocks all sizes.
W. P. HARLEY
Bowling Green, Ky.

GRAND SALINE SALT DOME
We are spudding in a test well off the Grand Saline Salt Dome in Van Zandt County, Texas, 10 miles northwest of the Van field. This dome is the highest dome in Texas and said to be the largest. The block has been a prospect for oil for 20 years and is in the trend on the west shore line of the basin.
Information furnished on request.
BRIDEWELL & HUTCHINS
P. O. Box 460, Tyler, Texas.

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